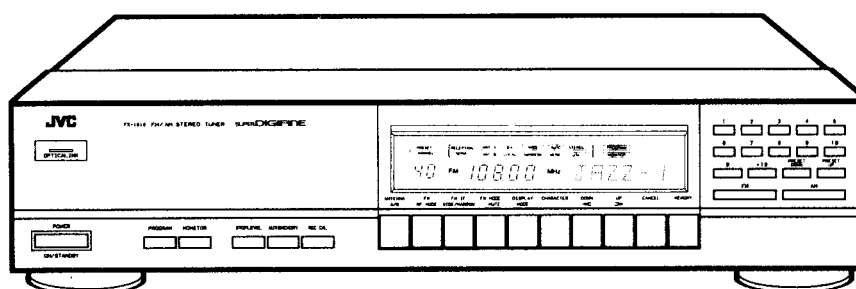


JVC

SERVICE MANUAL

MODEL No. **FX-1010TN**



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1 Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
 2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
 3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by ($\triangle$) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the Parts List of Service Manual may create shock, fire, or other hazards.
 4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
 5. Leakage current check (Electrical shock hazard testing)
- After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

Do not use a line isolation transformer during this check.

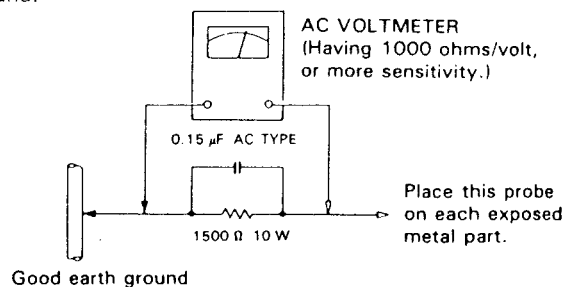
- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).

- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10 W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground.

Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

SPECIFICATIONS

FM SECTION

	IHF	DIN
Tuning Range	: 87.5 — 108.0 MHz	87.50 — 108.00 MHz
Usable Sensitivity	: 10.3 dBf (0.9 μ V/75 ohms)	—
50 dB S/N Sensitivity Mono	: 14.8 dBf (1.5 μ V/75 ohms)	—
Stereo	: 38.1 dBf (22 μ V/75 ohms)	—
26 dB S/N Sensitivity Mono	: —	0.8 μ V/75 ohms
46 dB S/N Sensitivity Stereo	: —	22 μ V/75 ohms
Signal to Noise Ratio (IHF-A, 85 dBf INPUT)		
Mono	: 94 dB	86 dB
Stereo	: 88 dB	80 dB
Total Harmonic Distortion Mono	: 0.009 % (WIDE) (at 1 kHz)	0.01 % (WIDE) (at 1 kHz)
Stereo	: 0.02 % (WIDE) (at 1 kHz)	0.04 % (WIDE) (at 1 kHz)
Capture Ratio	: 1.2 dB	1.0 dB
Selectivity	: 25 dB, $\pm$ 400 kHz (WIDE) 75 dB, $\pm$ 400 kHz (NARROW)	20 dB, $\pm$ 300 kHz (WIDE) 70 dB, $\pm$ 300 kHz (NARROW)
Image Rejection Ratio	: 90 dB at 98 MHz	90 dB at 98 MHz
IF Rejection Ratio	: 110 dB at 98 MHz	110 dB at 98 MHz
AM Suppression Ratio	: 65 dB	65 dB
Stereo Separation	: 60 dB (WIDE) (at 1 kHz)	65 dB (WIDE) (at 1 kHz)
Frequency Response	: 20 Hz — 15 kHz +0.3 dB, -0.5 dB	20 Hz — 15 kHz +0.3 dB, -0.5 dB
Output Level/Impedance	: 600 mV/ 2.2 kohms	600 mV/ 2.2 kohms
Antenna Input Impedance	: 75 ohms unbalanced (x 2)	
REC CAL Output Level	: Equivalent to 50 % FM modulation	

AM TUNER SECTION

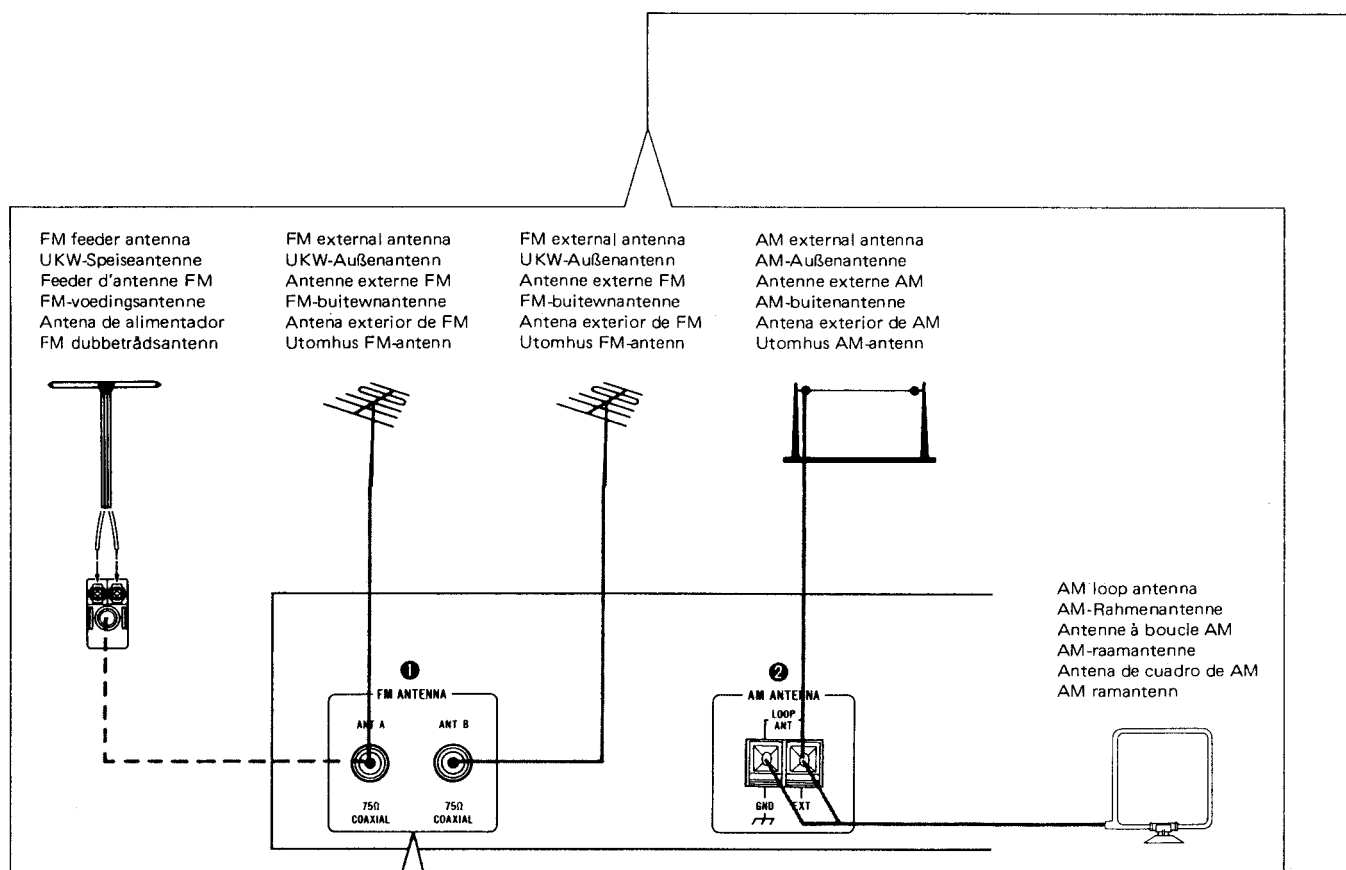
Tuning Range	: 522 kHz — 1,629 kHz, Channel spacing: 9 kHz 530 kHz — 1,630 kHz, Channel spacing: 10 kHz 530 kHz — 1,710 kHz, (For U.S.A. and Canada)
Usable Sensitivity	: 250 μ V/m
Total Harmonic Distortion	: 0.3 %
Signal to Noise Ratio	: 50 dB
Selectivity	: 35 dB $\pm$ 9 kHz 38 dB $\pm$ 10 kHz
Image Rejection Ratio	: 40 dB
IF Rejection Ratio	: 60 dB
Output Level	: 200 mV/2.2 kohms (at 30 % modulation)
Dimensions	: 435(W) x 101(H) x 298(D) mm (17-3/16" x 4" x 11-5/8")
Weight	: 4.1 kg (9.1 lbs.)

Design and specifications subject to change without notice.

POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC 120 V~, 60 Hz	18 watts
Canada		
U.K.	AC 240 V~, 50 Hz	
Australia		
Continental Europe	AC 220 V~, 50 Hz	
Other Areas	AC 110/120/220/240 V~, selectable, 50/60 Hz	

CONNECTION DIAGRAM



FM antenna connection:

Connect a feeder antenna or coaxial cable to the ANT A terminal using an antenna converter.
Connect a coaxial cable to the ANT B terminal using the F-plug provided.

UKW-Antennenanschluß:

Speiseantenne oder Koaxialkabel über einen Antennenkonverter an den ANT A-Anschluß anschließen.
An den ANT B-Anschluß unter Verwendung des mitgelieferten F-Steckers ein Koaxialkabel anschließen.

Raccordement de l'antenne FM:

Raccorder un feeder d'antenne ou un câble coaxial à la borne ANT A en utilisant un adaptateur d'antenne.

Raccorder un câble coaxial à la borne ANT B en utilisant la fiche F fournie.

Aansluiting van de FM-antenne:

Sluit een Voedingsantenne of koaxiaalkabel mbv. een antenneomvormer aan op de ANT A aansluiting.
Sluit een koaxiaalkabel mbv. de meegeleverde F-stekker aan op de ANT B aansluiting.

Conexión de la antena de FM:

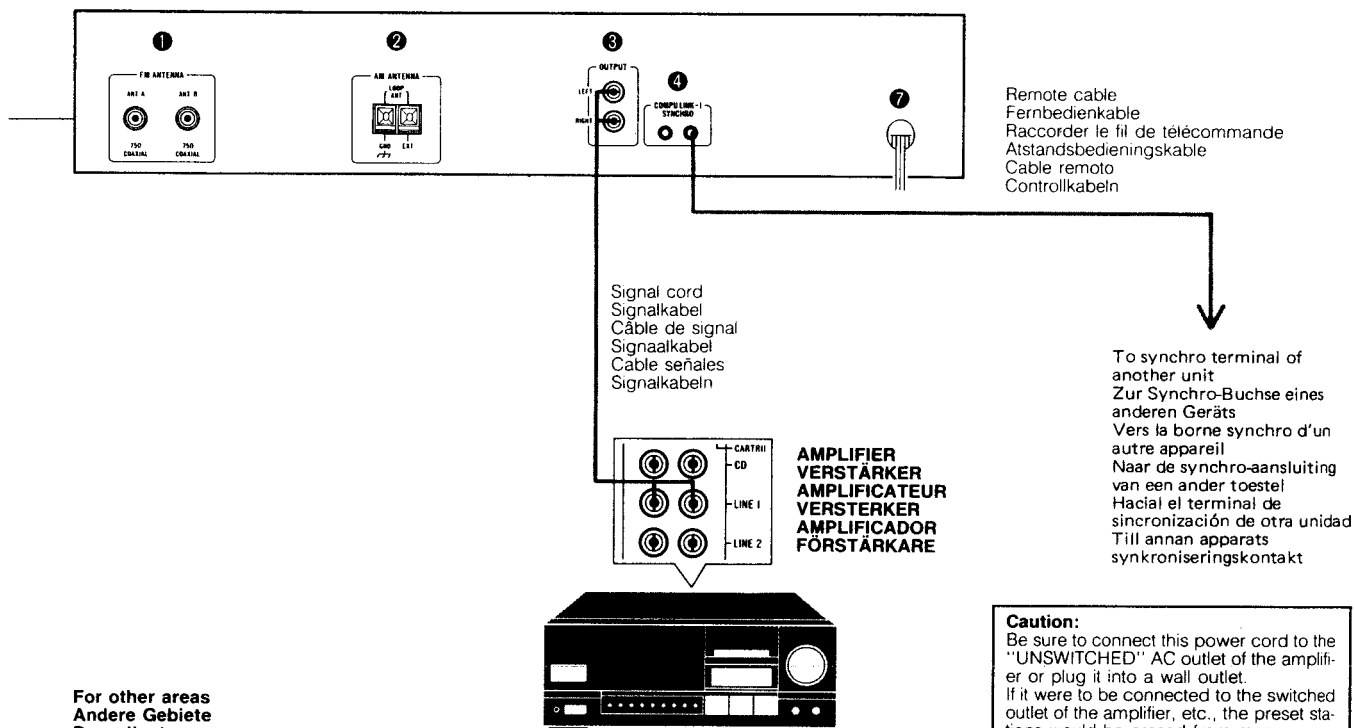
Conecte una bajada o cable coaxial al terminal ANT A utilizando un convertidor de antena.
Conecte un cable coaxial al terminal ANT B utilizando la clavija F suministrada.

FM antennanslutning:

Anslut en matarledning eller koaxialkabel till ANT A kontakten via en antennomvandlare.
Anslut en koaxialkabel till ANT B kontakten med användning av den medföljande F-pluggen.

For the Usa and Canada
Für die USA und Kanada
Pour les Etats-Unis et le Canada
Voor de USA en Canada
Para los EE.UU. y Canadá
För USA och Kanada

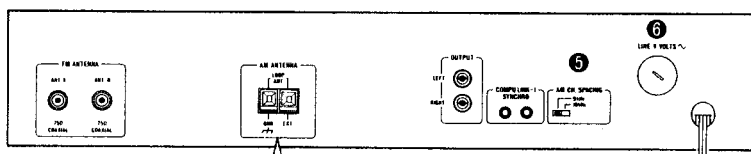
For continental Europe, the U.K., and Australia
Für Europa, Großbritannien und Australien
Pour l'Europe continentale, le Royaume-Uni et l'Australie
Voor het vasteland van Europa, U.K. en Australië
Para Europa Continental, el Reino Unido y Australia
För kontinentala Europa, Storbritannien och Australien



Remote cable
Fernbedienkabel
Raccorder le fil de télécommande
Afstandsbedieningskabel
Cable remoto
Controllkabeln

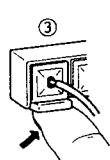
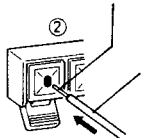
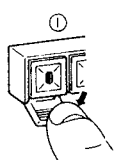
To synchro terminal of
another unit
Zur Synchro-Buchse eines
anderen Geräts
Vers la borne synchro d'un
autre appareil
Naar de synchro-aansluiting
van een ander toestel
Hacia el terminal de
sincronización de otra unidad
Till annan apparats
synkroniseringskontakt

For other areas
Andere Gebiete
Pour d'autres pays
Voor andere landen
Para otros países
För andra länder



Connection of AM antenna
Anschluß einer AM-Antenne
Raccordement d'une antenne AM
Aansluiting van de AM antenne
Conexión de una antena de AM
Anslutning av AM-antenn

Core lead
Kernader
Ame
Binnenste draad
conductor aislado
Inre ledning



Cable cover
Kabelhülle
Isolant
Plastik isolatie
Cubierta de cable
Kabelisolering

Take care not to insert the cable insulation when connecting the wire of cable.
Darauf achten, beim Kabelanschluß nicht die Isolierung miteinzuschieben.
Ne pas introduire l'isolant du câble en raccordant le fil du câble.
Zorg ervoor niet de kabelisolatie in te steken bij het aansluiten van de draad.
Tenga cuidado de no insertar la aislación del cable cuando conecte el alambre del cable.
Se till att inte sticka in kabelisoleringen vid kabelns anslutning.

Caution:
Be sure to connect this power cord to the "UNSWITCHED" AC outlet of the amplifier or plug it into a wall outlet.
If it were to be connected to the switched outlet of the amplifier, etc., the preset stations would be erased from memory.

Achtung:
Dieses Netzkabel unbedingt an den ungeschalteten Netzausgang eines Verstärkers oder an eine Netzsteckdose anschließen. Bei Anschluß an einen geschalteten Netzausgang etc. werden die Senderspeicher gelöscht.

Attention:
Bien raccorder ce cordon secteur à la prise non commutée ("UNSWITCHED" AC) de l'amplificateur ou brancher directement à une prise secteur.
S'il est raccordé à la prise commutée de l'amplificateur, etc., les stations préétablies pourront être effacées de la mémoire.

Voorzichtig:
Zorg ervoor de stekker van dit netsnoer in de ongeschakelde (UNSWITCHED) netuitgang van de versterker of in een stopcontact te steken.
De voorkeuzezenders worden uit het geheugen gewist als deze in de geschakelde netuitgang van een versterker, enz. wordt gestoken.

Precaución:
Asegúrese de conectar este cable de alimentación a un tomacorriente de CA "UNSWITCHED" del amplificador o enchúfelo en un tomacorriente de pared. Si se conectara al tomacorriente con conmutador del amplificador, etc., se borrarían las estaciones presintonizadas de la memoria.

Varning:
Se noga till att nätsladden från denna apparat ansluts till förstärkarens nättuttag märkt "UNSWITCHED" eller ett vägguttag. Ansluts stickkontakten till ett omkopplingsbart nättuttag, raderas inprogrammerade stationer.

- ① FM ANTENNA terminals
- ② AM ANTENNA terminals
- ③ OUTPUT terminals
- ④ Connect to the amplifier's TUNER terminals.
- ⑤ COMPU LINK-1/SYNCHRO terminal
- ⑥ Connect to the COMPU LINK terminal of another unit.

- ⑦ AM channel spacing switch
Set this switch according to the AM channel spacing (9 kHz or 10 kHz) in your country. Not provided on units for U.S.A., Canada, Australia, United Kingdom and continental Europe.
- ⑧ Voltage selector
Not provided on units for U.S.A., Canada, United Kingdom, continental Europe and Australia.
When this equipment is used in an area where the supply voltage is different from the preset voltage, reset the voltage selector to the correct position.

- ⑨ Power cord

Notes:

1. **Disconnect the power cord when connecting any component.**
2. **Connect to an amplifier with left and right channels connected correctly. Reversed channels will degrade the stereo effect.**
3. **Connect plugs or wires firmly. Poor contact may result in hum.**
4. **In case of using the external AM antenna, be sure to connect a ground wire to the GND terminal to obtain AM signals with less noise.**

FRONT PANEL

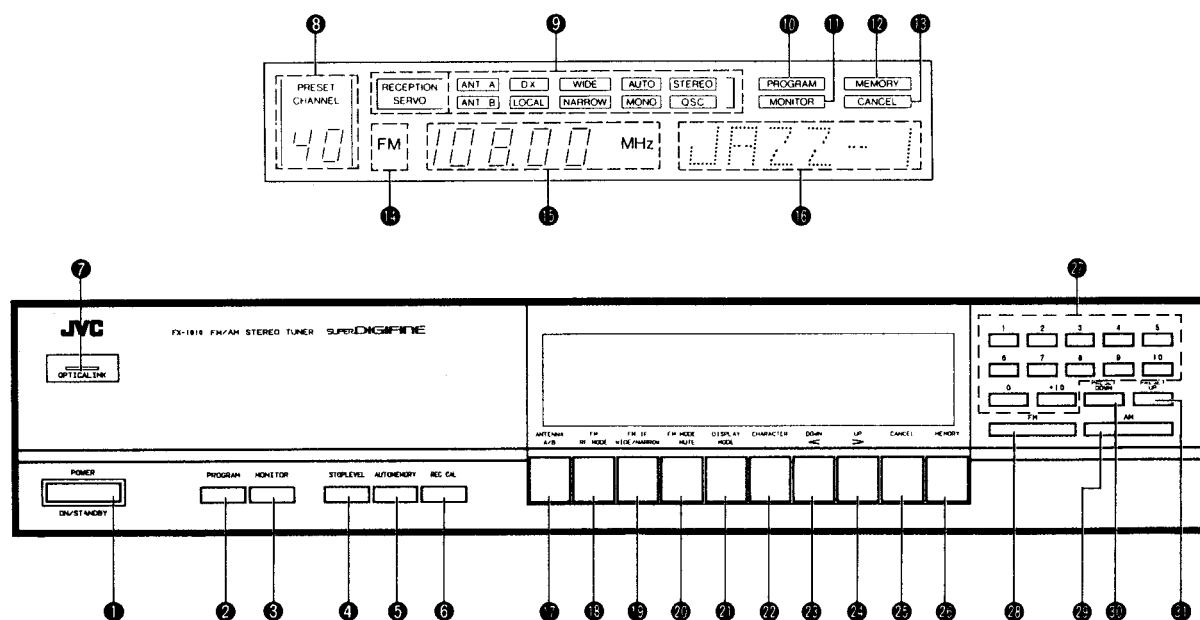


Fig. 1
Abb. 1
Abb. 1

① POWER (ON/STAND BY)

Press this button to turn the power ON. The display section will light when the power is ON. Press again to set to the STAND BY mode.

Notes:

- Even when the POWER switch is set to STAND BY, this unit consumes a small amount of electricity (5 watts). To shut the power completely off, disconnect the power cord. The unit must remain plugged in to wall receptacle in order to maintain the preset channel memory. Even if a timer is used or there is an electrical failure, or if the power plug is pulled out, the preset memory operates for about a week at normal room temperature. If it exceeds this period, preset frequencies will be lost. If this occurs, please preset the unit over again.
- When the power is turned ON without any frequencies preset, the letters "JVC OPTICALINK HI-FI TUNER" will appear in the display in sequence.

② PROGRAM

Up to 8 broadcasts can be programmed for recording. When programming, press this button so that the PROGRAM indicator lights. When the PROGRAM indicator is lit (with the MONITOR indicator not lit), no control buttons inputs other than POWER and PROGRAM will be accepted. For more details, refer to "How to program broadcasts".

③ MONITOR

When programming and monitoring the program:

When several broadcasts have been programmed, press this button to check the frequencies in order that they have been programmed.

④ STOP LEVEL

This button is used to set the sensitivity when using the auto memory or auto stop function. The sensitivity can be varied in steps of 5 dB over a 20 to 60 dB range for FM, and a 60 to 90 dB range for AM broadcasts. When a higher level is selected, only stations broadcasting strong signals will be stored in memory by the auto memory function.

⑤ AUTO MEMORY

Press this button so that the MEMORY indicator lights; at this time, the PRESET CHANNEL number blinks, and "KEY-IN" blinks in the character display section. Now select the desired PRESET CHANNEL with the 10-key keypad while the MEMORY indicator is lit; the tuner scans the frequencies in the order of increasing frequency and, when a broadcast is detected, the PRESET CHANNEL indicator flickers for about 4 seconds. If you don't want to store the frequency of the broadcast in memory, press this button again within 4 seconds; the auto memory operation will start again. If the button is not pressed, after the PRESET CHANNEL indicator blinks for 4 seconds, the current frequency is stored in the memory of desired preset station, and scanning restarts. The same function is repeated for all channels.

When the frequency is scanned to the top of the band, the auto memory function stops and the channel number in which the highest frequency is stored is displayed. If no frequencies have been stored, the top frequency in the band will be displayed. When all channel memories have frequencies stored in them, the last frequency is tuned to and its channel number is shown.

The FM RF MODE, FM IF WIDE/NARROW and QSC are automatically set for optimum reception and these values are stored in memory with the frequency. But FM ANT A/B is not set automatically.

For more details, refer to "How to operate the auto memory function".

Notes:

- Auto memory will not function if the preset channel number is input with the 10-key keypad after the MEMORY indicator has gone out.
- When auto memory operation is completed, the display shows the letters "AUTO MEMORY END" in sequence.

6 REC CAL

Press this button to check the recording level of an AM or FM broadcast; the "R-CAL" is displayed in the character display section. When this is ON, a standard signal of approx. 440 Hz will be output; adjust the REC LEVEL control of your tape deck so that the recording level meter indicates 0 VU. It is best to set the recording level for different broadcasts and types of tape; for more details, refer to the tape deck's instruction manual.

Note:

- When the standard signal of approx. 440 Hz is output, it is impossible to listen to broadcasts; after checking the recording level, be sure to press this button again so that the "R-CAL" display goes out and the normal display status is restored.

7 OPTICALINK indicator

This indicator blinks when any of control buttons is operated, to show that the internal OPTICALINK circuitry activates.

8 PRESET CHANNEL display

This shows the preset channel selected by the 10-key keypad, for a total of 40 FM and AM stations. It also shows the station number to be programmed while programming or monitoring programmed broadcasts.

9 RECEPTION SERVO indicators

ANT A/ANT B:

Either ANT A or ANT B indicator lights to show which antenna is being used for reception of the broadcast.

DX/LOCAL:

Either indicator lights to show the selected FM RF sensitivity.

WIDE/NARROW:

Either indicator lights to show the selected FM IF bandwidth.

AUTO/MONO:

Either indicator lights to show the FM MODE and FM MUTE being selected.

STEREO/QSC:

When a signal strength of an FM stereo broadcast is low, the QSC indicator lights and the QSC (Quieting Slope Control) circuit is activated to reduce noise. When the signal strength is sufficiently high, this circuit will be released automatically.

The STEREO indicator lights when an FM stereo broadcast is being received with the AUTO indicator lit.

10 PROGRAM indicator

When the PROGRAM button is pressed, this indicator lights to show that programming for unattended recording can be performed.

11 PROGRAM MONITOR indicator

This indicator lights when monitoring the contents of programs and when programming. For details, refer to "How to program broadcasts" on page 35.

12 MEMORY indicator

When the MEMORY or AUTO MEMORY button is pressed, this indicator lights for about 5 seconds.

13 CANCEL indicator

This indicator lights when the preset station is cancelled. For details, refer to "How to cancel preset channels".

14 FM/AM indicator

"FM" is displayed when an FM broadcast is received, and "AM" is displayed during AM broadcast reception.

15 Frequency display

This displays the frequency in MHz for FM broadcast and in kHz for AM broadcasts.

16 Station name/signal strength display

Any 6 characters (letters or numbers) can be input using the CHARACTER button and the UP/DOWN buttons to identify the preset station. If the station name is stored in memory together with the frequency, when the required PRESET CHANNEL is selected, the station name will appear in the display. When the frequency is changed by pressing the UP/DOWN buttons, the signal strength of the received frequency is indicated in dB.

This also shows the stop level when set with the STOP LEVEL button, and the signal strength of the tuned station when the DISPLAY MODE button is pressed; both are shown in dB.

17 ANTENNA A/B

Use to select the antenna connected to the ANT A or ANT B terminals on the rear panel. The "ANT A" or "ANT B" indicator selected will light.

18 FM RF MODE

Normally set so that the DX/LOCAL indicator shows DX; in areas where the input signal is too strong and there is interference, press this button so that "LOCAL" is displayed. This attenuates the signal by about 20 dB strength.

19 FM IF WIDE/NARROW

Normally set so that the FM IF indicator shows WIDE; set so that the FM IF indicator shows NARROW when there is interference in a strong or weak signal strength area. While the frequency is changing after pressing tuning UP/DOWN buttons, the FM IF indicator shows NARROW, and each time a frequency used for a broadcast is received, NARROW or WIDE will be indicated automatically according to the signal input.

20 FM MUTE/MODE

Normally set so that the mode indicator shows AUTO; set so that the mode indicator shows MONO when reception is noisy or the signal is weak. When AUTO is displayed, FM stereo broadcasts are received in stereo and FM monaural broadcasts in mono; interstation noise is eliminated automatically. When MONO is displayed, even if the broadcast is FM stereo, it will be received in mono but noise is reduced so that it sounds better.

21 DISPLAY MODE

With the preset station name displayed in the character display section, when this button is pressed, the signal strength is displayed in dB. 0 dB corresponds to 1 μ V/75 ohms in FM and 1 μ V/m in AM. Signal strengths of more than 10 dB for FM and more than 50 dB for AM will be indicated in 1-dB steps. To display a station name which you have input yourself, press this button again. The optimum signal strength is more than 40 dB for FM mono, more than 60 dB for FM stereo and 70 dB for AM.

22 CHARACTER

This button is used when storing the name of a preset stations in memory.

When this button is pressed first, the character input mode is activated. After the character or number to be input is selected by pressing the UP/DOWN keys, press this button again to store the selected character in memory.

Up to 6 characters can be input for each station name.

23 DOWN (<)

Press this button to tune to lower frequencies.

This button is also used for selecting characters in descending order when storing a station name in memory.

24 UP (>)

Press this button to tune to higher frequencies.

This button is also used for selection of characters in ascending order when storing a station name in memory.

Each time the frequency is changed by pressing the UP or DOWN button, and each time the changing of the frequency is stopped by AUTO STOP function, the reception conditions are set optimally by the reception servo function.

Notes:

- Each time you press either the UP (>) or DOWN (<) button, the FM frequency will change in 50-kHz or 100-kHz steps, and the AM frequency in 9-kHz or 10-kHz steps.

Holding either UP (>) or DOWN (<) button pressed for more than 1 second and then releasing it starts auto tuning. When a broadcast is received, tuning will stop. But if either button is kept held in, scanning continues even when a broadcast is received. In auto tuning, pressing either button stops scanning. During tuning toward higher frequencies, when the upper limit frequency (108.0 MHz for FM) is reached, the frequency will change to the lower limit (87.50 MHz for FM) and then auto tuning restarts in the direction of increasing frequency. During tuning toward lower frequencies, when the lower limit (87.50 MHz for FM) is reached, the frequency will change to the upper limit (108.0 MHz for FM) and auto tuning restarts in the direction of lower frequencies. The same operation is performed in AM tuning.

- When the frequency is changed by pressing UP or DOWN, the signal strength of the station being received is displayed in the character display section.

- When the tuning UP button is pressed, "F-UP" will be displayed. (In auto tuning, after this, "SEARCH" will be displayed.) When the tuning DOWN button is pressed, "F-DOWN" will be displayed. (In auto tuning, after this, "SEARCH" will be displayed.)

Channel spacing

Area	Band	FM	AM
U.S.A., Canada		100 kHz	10 kHz
Continental Europe, UK, Australia		50 kHz	9 kHz
Other areas		50 kHz	9 kHz or 10 kHz

An AM channel spacing switch is provided on the rear panel so you can select 9-kHz or 10-kHz steps according to the area in which you are using the tuner.

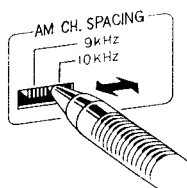


Fig. 2
Abb. 2
Afb. 2

When resetting the AM channel spacing:

Example:

Switch over using the tip of a ball-point pen as shown in Fig. 2. When doing this, be sure to disconnect the power cord then wait for about 2 ~ 3 seconds before switching over the spacing switch.

25 CANCEL

This button is used to cancel incorrect characters when inputting the station name to cancel the contents of the program and to cancel Preset Channels.

26 MEMORY

When this button is pressed, the MEMORY indicator will light for about 5 seconds to show that the memory is ready to receive preset station information. Select one of the Preset Channels with the 10-key keypad while the MEMORY indicator is lit.

In the case of FM, the ANT A/ANT B, DX/LOCAL, WIDE/NARROW, AUTO/MONO are also stored in memory together with the frequency.

Notes:

- If the preset channel buttons are pressed after the MEMORY indicator has gone out, the frequency will not be stored in memory; in this case, press the MEMORY button again.
- Be sure to store the antenna selected in memory at the same time when presetting broadcasts because the antenna selected cannot be stored in memory independently.

27 Preset channel numeric keypad (1 to 10, 0, +10)

Up to 40 FM or AM broadcast stations can be preset with this unit. After presetting, select the desired channel by inputting the preset channel number with these buttons. When selecting a preset channel numbered "1" to "10", just press the corresponding numeric button. When selecting preset channels numbered 11 or above, first press the +10 button the required number of times, then press a button from 1 to 10. For example, to select preset channel 35, first press the +10 key for three times, then press 5. Or, to select preset channel 40, press +10 key three times, then 0 or press +10 key four times, then 0. When the desired preset channel is recalled, the display shows the preset channel number and the corresponding frequency. If the station name is also stored in memory, it will be displayed at the same time.

Notes:

- Each time a preset station is recalled, QSC is set optimally by the reception servo function.
- The 0 key is effective only after the +10 key has been pressed.

28 FM

Press this button to receive FM broadcasts.

29 AM

Press this button to receive AM broadcasts.

30 PRESET DOWN

When this button is pressed, the preset channel number displayed will change in descending order.

31 PRESET UP

When this button is pressed, the preset channel number displayed will change in ascending order.

Note:

- When the PRESET UP or DOWN button is kept pressed for more than 1 second, the preset channel number will be changed continuously in the increasing or decreasing direction while the button is pressed.

ANTENNAS

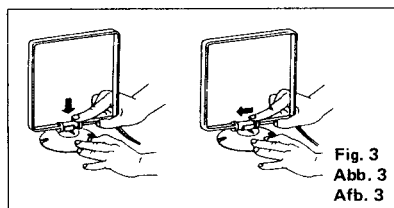


Fig. 3
Abb. 3
Afb. 3

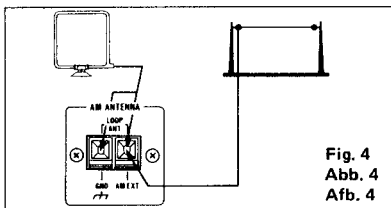


Fig. 4
Abb. 4
Afb. 4

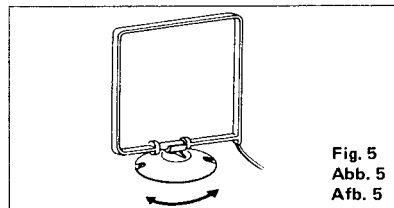


Fig. 5
Abb. 5
Afb. 5

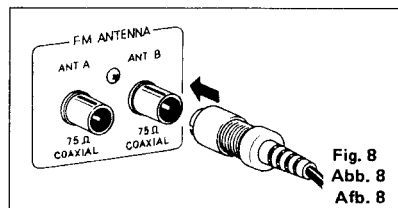
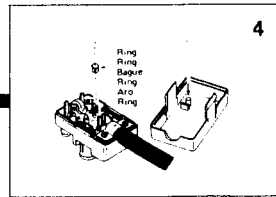
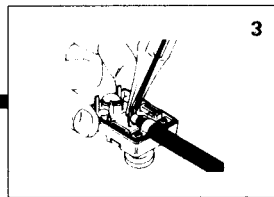
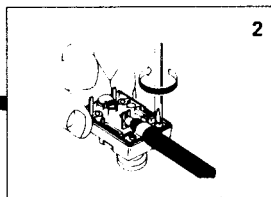
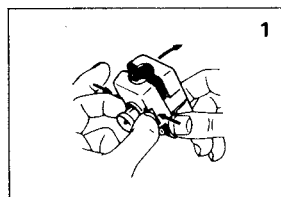


Fig. 8
Abb. 8
Afb. 8

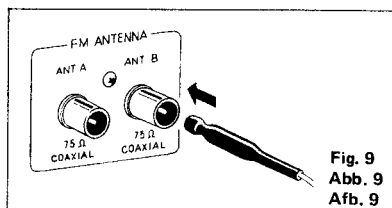


Fig. 9
Abb. 9
Afb. 9

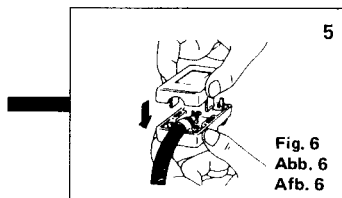


Fig. 6
Abb. 6
Afb. 6

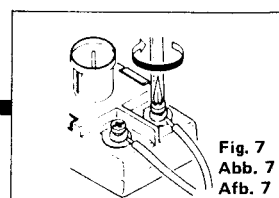
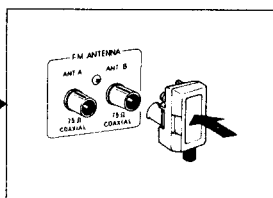


Fig. 7
Abb. 7
Afb. 7

How to fix the loop antenna (Fig. 3)**AM loop antenna (Fig. 4)**

This antenna is for the reception of local AM broadcasts.

AM external antenna (Fig. 4)

If AM reception is unsatisfactory, connect an external AM ANTENNA (Single-wire antenna) to the AM ANTENNA terminal.

Noise and interference (Fig. 5)

Change the direction of the loop antenna or reinstall it in a better position when reception is noisy.

Notes:

- If the provided loop antenna is not connected or an uninsulated antenna wire touches the rear panel, it will be impossible to receive AM broadcasts.
- When installing an external AM antenna, leave the AM loop antenna connected.

FM antenna

Two antenna terminals are provided for the connection of two FM antennas and you can select the one that gives best reception.

• How to connect the FM connector (Except for W. Germany)**In case of a 75-ohm antenna (Fig. 6)**

1. Remove the case by pressing both sides.
2. Fix the coaxial lead.
3. Tighten the stripped core.
4. Remove the ring and fix it to the rear of the case to avoid losing it.
5. Install the case.

In case of a 300-ohm antenna (Fig. 7)

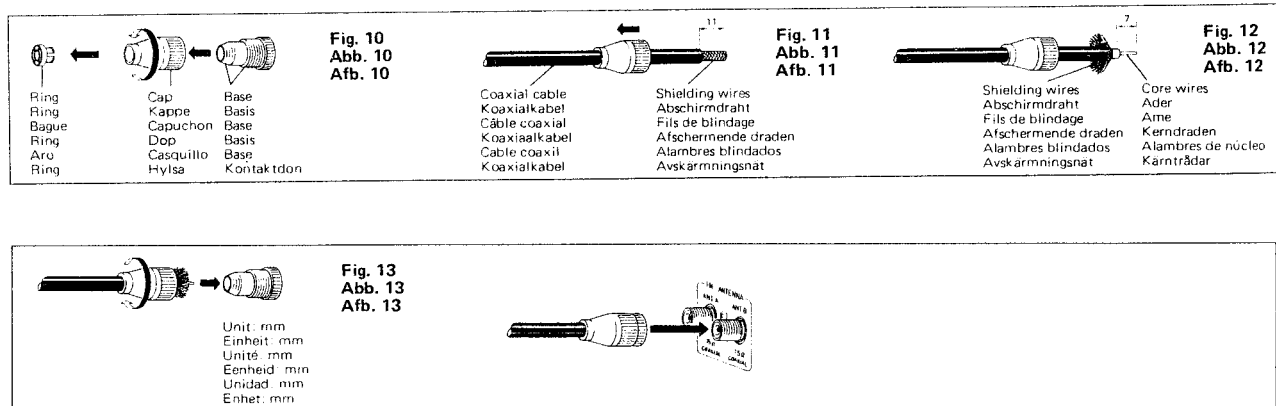
If you have removed the ring, install it back in its position.

For W. Germany**Using the IEC-type antenna terminal (Fig. 8):**

The IEC-type antenna terminal on this model can be used for reception of FM broadcasts. Connect this terminal to the terminal labelled RADIO of the house antenna. The appropriate connecting cable is DIN 45 332. For more details, consult your dealer.

FM wire antenna (Fig. 9: For W. Germany)

The FM wire antenna provided can be connected to the 75-ohm coaxial jack temporarily.

**How to connect the coaxial cable**

1. Loosen the cap to remove it from the base. (When thick cable is used, remove the ring.) (Fig. 10)
2. Install the cap over the coaxial cable and dress the end of the coaxial cable. (Fig. 11)
3. Spread the shielding (mesh) wires at right angles to the cable, then dress the end of the coaxial cable. (Fig. 12)
4. Insert the end of the coaxial cable into the base (at this time, be careful that the shielding wires do not come into contact with the core wires), then secure it to the base by tightening the cap. (Fig. 13)

Tips for Better FM Reception

If the antenna is not installed properly, reception will be poor, regardless of the capability of tuner. Try to find the most suitable antenna for the best possible performance of your tuner.

- An outdoor antenna which has more elements has a higher gain and a sharper directivity.

- Find the direction in which multipath interference is least in the following way:

Press the DISPLAY MODE button to display the signal strength and adjust the antenna to obtain maximum signal strength. Do this tuning to a broadcasts with a relatively high level of noise and adjust the antenna for minimum distortion and noise.

(Multipath interference is identical to "ghost" in TV reception. It occurs when the tuner picks up two or more signals simultaneously; one coming from a broadcasting station directly and the others reflected from a hill or building and arriving slightly after the direct signal.)

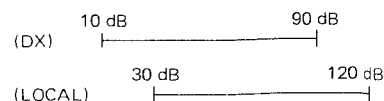
- Generally the coaxial cable suffers from more loss than the flat parallel feeder when they are of the same length. The flat parallel feeder, however, is more liable to pick up noise.

FM Field Strength Display

The FX-1010TN has a function which measures the electric field strength and displays it in dB. However, the measurement range is different depending on the RF mode. Especially, in areas where the field strength is more than 90 dB, set the RF mode to [LOCAL] to obtain a more correct reading of the field strength.

With field strength between 30 and 90 dB, the figure displayed may differ between the [DX] and [LOCAL] modes. It is recommended that you measure the field strength in the [DX] mode in areas where the field strength is under 90 dB.

- * FM field strength measurement ranges
- * UKW-Feldstärke-Meßbereiche
- * Gamnies de mesure de l'intensité de champ FM
- * FM-veldsterkte meetbereiken
- * Gama de medida de la intensidad de campo de FM
- * FM-fältstyrkas mätområden



COMPU LINK CONTROL SYSTEM

COMPU LINK Control System is a computer-linked system in which the computer operates on individual COMPU LINK Components* of an audio system to effect control. One of the features related to this unit is the one-touch selection of all system components without requiring any "host" component.

To generate this automatic source selection, connect the provided remote cables to connect all source components, and you can switch sources and play a selected source automatically at the simple one-touch of the source selector button of the amplifier or receiver. You can also use the activation button of any desired source for this purpose. When the sources have been switched over, the previous source component will stop playing within about five seconds.

* The COMPU LINK Component is required to meet the following requirements:

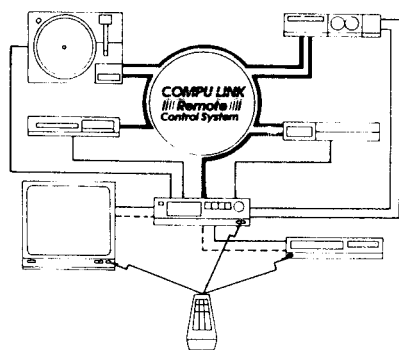
- Manufactured by JVC.
- Equipped with COMPU LINK-1/SYNCHRO terminals which are so designed that all system sources synchronously operate with the provided remote cables.

Notes:

- **Abnormal operation will result if the power supply of one of the components is interrupted halfway. If this happens, push the activation button again to restart.**
- **Ensure that the COMPU LINK-1/SYNCHRO terminal of each component is connected with the attached remote cable. Be sure to read the instruction manual for each component very carefully.**

INFORMATION FOR THE CUSTOMERS WHO HAVE NOT PURCHASED OUR COMPU LINK REMOTE CONTROL COMPONENTS YET.

COMPU LINK Control System can easily be stepped up to a comprehensive "remote controllable" audio/video (A/V) system with the simple addition of a component (named "COMPU LINK Remote Control Component"). Using this upgraded system (named "COMPU LINK Remote Control System"), virtually every function in the entire A/V system can be controlled from any desired source and from where you are seated with a handheld remote control unit. For more information, consult your JVC dealer.



OPERATION

Listening to broadcasts

■ How to listen to broadcasts

1. Press the POWER button to turn the power on.
2. Set the input select button of the amplifier to TUNER.
3. Press the FM or AM button so that the desired tuned band is selected.

● When you don't remember of exact frequency

- 4-1. After pressing the UP or DOWN button for more than 1 second, release it, and auto scanning will start. Auto tuning stops when a broadcast is received. To increase the frequency, press the UP button and to decrease it, press the DOWN button. To stop during auto tuning, press the UP or DOWN button.

● When too few stations can be tuned to by auto tuning

- 4-2. Tap the UP or DOWN button. The manual tuning is performed and the frequency changes in steps of 50 or 100 kHz for FM and 9 or 10 kHz for AM.

Using this method lets you tune to broadcasts that it is impossible to receive by auto tuning.

● When you know the frequency

- 4-3. Keep the UP or DOWN button pressed until the desired frequency is almost tuned to, then tap to obtain the exact frequency.

● When stations are preset

- 4-4. Input the required preset channel number with the numeric keypad. For presetting broadcasts, refer to "How to preset".
5. Adjust the volume using the amplifier's VOLUME control.

Notes:

- When the signal strength is too weak or there is interference, auto tuning may not be performed correctly. In this case, install an external antenna or use manual tuning.
- When the MONO mode indicator lights even when reception is good, stereo broadcasts will be heard in mono. In an area where the signal strength is too weak, when "AUTO" lights, broadcasts may be eliminated by the muting circuit.

Be sure to set the FM MUTE/MODE button according to the signal strength in your area.

■ How to preset

1. Make sure that the PROGRAM indicator is not lit.
2. Check previously preset frequencies.
3. Tune to the desired frequency. For tuning to broadcasts, refer to "Listening to broadcasts".
4. Press the MEMORY button. The MEMORY indicator lights for about 5 seconds.
5. Select one of the preset channels by inputting the preset channel number with the numeric keypad while the MEMORY indicator is lit. The frequency, (with ANT A/B, RF MODE and IF BAND) will be stored in the memory corresponding to the specified preset channel. (At this time, if the station name has already been preset, it will also be displayed.)

Example:

1. To select the 20th preset channel:
First press [+10] button twice, the press [0], or press [+10] first, then press [10].
2. To select the 15th preset channel:
First press [+10] button, then press [5].

Note:

- After the MEMORY indicator has gone out, even if the preset channel is recalled by pressing the numeric keypad, the frequency cannot be stored in memory.

■ How to store the characters

1. Recall the preset channel into which the desired characters are to be stored by inputting the channel number with the numeric keypad.
2. Press the CHARACTER button. At this time, if any characters have been stored before, the first of the previously stored characters will blink. If characters have not been stored, "—" will blink in the first character position. When the required character appears, press the CHARACTER button again.
3. Press the UP or DOWN button repeatedly until the required character or number appears in the first character position. If the CANCEL button is pressed in this condition, the character displayed will go out and blank ("—") will appear in the position. When the required character appears, press the CHARACTER button again.
4. Repeat steps 2. and 3. to input other characters or numerics, as required. In the character memory, up to 6 positions are available. This can be used to store the station name or abbreviation, as required.

Notes:

- In the character display input mode, the characters will appear in the following order when the UP/DOWN buttons are pressed. When the UP/DOWN button is kept pressed for more than 0.5 seconds, the character will change continuously, and stop changing when the button is released.
- If the frequency is changed after inputting the characters, they will be cancelled. Because of this, be sure to preset the receiving frequency correctly before inputting characters.
- The previously selected character will be replaced with the character (or figure, symbol) which has just been input, regardless of the MEMORY button.
- To stop inputting characters during operation, press the DISPLAY MODE button.

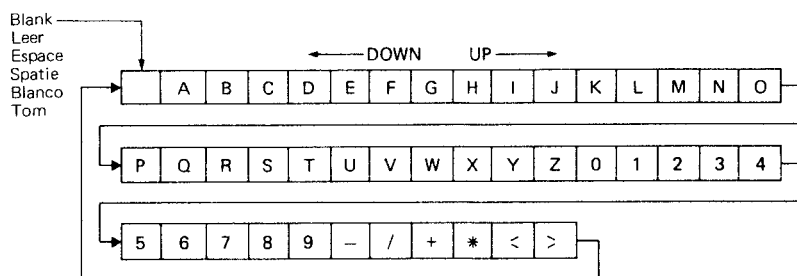
■ How to operate the auto memory function

1. Press the AUTO MEMORY button. The MEMORY indicator lights for about 5 seconds; at the same time, the PRESET CHANNEL number and the "KEY-IN" display blink.
2. Press any of the preset channel number while the MEMORY indicator is lit. The frequency received changes continuously in the up direction. If there are broadcasts, their frequencies and the preset channel number will be stored in memory. At the same time, RF MODE, IF BAND and QSC are automatically set to their optimum values according to the signal strength of the station received by the reception servo function, and they are stored in the preset channel memory together with the frequency.

To perform the auto memory function, first set the frequency shown in the display to the lower end of that range. After the MEMORY indicator has gone out, even if the preset channel number is input, the auto memory function cannot start. In this case, press the AUTO MEMORY button again to preset stations.

Before using auto memory

Press the FM ANTENNA A/B button to select the antenna. If the FM antenna is not connected, auto memory function is impossible.



For example, when "D" is displayed, pressing the UP button will change the display to "E" and pressing the DOWN button will change the display to "C".

■ How to set the stop level

1. Press the STOP LEVEL button.
The "LEVEL" will be displayed for about 1 second, then ... In the FM mode, the display changes in the order "-- dB", "20 dB", "25 dB", "30 dB", ... "55 dB", "60 dB", then "-- dB" again.
In the AM mode, the display changes in the order "-- dB", "60 dB", "65 dB", "70 dB", ... "85 dB", "90 dB", then "-- dB" again.
The "-- dB" display shows that tuning will stop automatically when the signal strength is below 20 dB for FM and 60 dB for AM.
2. When the required stop level has been displayed for about 5 seconds, the display goes out and the normal display is restored. While "LEVEL" is displayed, pressing the STOP LEVEL button will display the currently selected stop level.

Note:

- When searching for stations broadcasting weak signals, set the stop level to a lower level, and when searching for stations broadcasting strong signals, set to a higher level.

■ For better reception

Listening to FM broadcasts

1. Normally set the FM RF MODE button so that DX is displayed. Refer to ⑩ FM RF MODE button on page 13.
2. Two FM antennas can be connected. If two antennas are connected, switch between them by pressing the FM ANTENNA A/B button to achieve better reception.
3. If there is noise or interference, install an outdoor FM antenna or press the FM IF WIDE/NARROW button so that NARROW is displayed.

■ How to cancel preset channels

1. With the FX-1010TN, unnecessary preset channels in which no broadcasts are stored can be deleted.
2. For example, when FM stations have been stored in preset channels 1 to 17 and AM stations in preset channels 21 to 38, unnecessary preset channels (preset channel numbers 18, 19, 20, 39 and 40) can be deleted. If this is done, unused preset channels (18 to 20 and 39, 40) will be skipped when tuning is performed with the PRESET UP/DOWN buttons, and in the preset scanning operation.
3. When the PROGRAM and MONITOR indicators are not lit, press the CANCEL button. The CANCEL indicator lights, and the PRESET CHANNEL number begins blinking.
At this time, input the preset channel numbers to be deleted using the 10-key keypad.

Notes:

- After being deleted, preset channels cannot be recalled using the 10-key keypad.
- If a preset channel that has been cancelled is required again, store the desired frequency, etc. in the preset channel using the memory operation.

■ How to operate preset Up/Down scanning

1. With the Preset Up (or Down) Scanning function of the FX-1010TN, each of the stored preset channels can be recalled for approx. 5 seconds in sequence automatically.
2. First press the MEMORY button then the PRESET UP (or PRESET DOWN) button. The preset channel number in the display is increased (or decreased) by one and the frequency stored in the corresponding preset channel is recalled for approx. 5 seconds.
3. This operation will be performed in sequence automatically; the Preset Scanning operation stops when the preset channel number returns to that previously received (the one immediately before starting the Preset Scan operation).
4. During this operation, the program being broadcast by each preset station can be heard for approx. 4 seconds after it is recalled.
5. The Preset Scan operation will be performed in the order ... 38, 39, 40, 1, 2, 3 ... by UP scanning, and in the order ... 3, 2, 1, 40, 39, 38 ... by DOWN scanning.
6. To release the Preset Scanning operation midway, press the PRESET UP (or PRESET DOWN) button again. The Preset Scanning operation stops and the preset channel which is being received at that time will continue to be received.

Note:

- When the PRESET UP or DOWN button is pressed with the MEMORY indicator lit by pressing the MEMORY button, the preset scanning operation is activated in the upward or downward direction.

Recording broadcasts

■ How to record broadcasts

1. Press the POWER button to turn the power on.
2. Tune to the broadcast to be recorded. For details, refer to "Listening to broadcasts" on page 27.
3. Press the REC CAL button and adjust the recording level control of the tape deck so that the recording level meter indicates 0 VU.
4. After recording level adjustment is complete, press the REC CAL button so that the REC CAL signal is no longer output.
5. Set the tape deck for recording. For more details, refer its instruction book.

■ How to perform unattended recording

As this unit does not have a built-in timer, a separate timer is necessary.

• Unattended recording of one broadcast

If the PROGRAM indicator is not lit and power is applied again, the last frequency received before power was switched off will be received and recorded automatically. Make sure to tune the desired station before switching the tuner off.

• Programmed recording

1. The programming function of this unit permits up to 8 broadcasts, either AM or FM, to be programmed for unattended recording.
First connect the power cord to the timer and program the broadcasts, then set the timer according to the desired time and set the tape deck for recording.

2. Press the PROGRAM button so that the PROGRAM indicator lights, and set the deck to the recording mode.
3. Leave the power switches of all components ON, and set the timer to the standby mode.
4. When the preset on time is reached, power will be supplied to each component, and the first programmed station (PRGM-1) will be received by the tuner.
5. In this way, whenever power is supplied to the tuner at preset ON times, the received station will automatically change in the programmed order to record them.

■ How to program broadcasts

1. First decide the order in which the broadcasts are to be arranged in the program, then press the MONITOR button.
2. The "PROGRAM" and "MONITOR" indicators light simultaneously. And at the same time, "PGM-1" is displayed in the character display section, while the preset channel number or "--" blinks in the PRESET CHANNEL display.
3. Input the desired preset channel number using the 10-key keypad.
For example, when inputting preset channel 15, press [+10] then [5]. The contents of the preset channel will be shown in the display.
4. Then press the MONITOR button again. "PRGM-2" will be displayed in the character display section.
In this way, repeat the same procedure until "PRGM-8" appears in the display.

• When programming 2 or 3 broadcasts

5. Delete unwanted programs from previously programmed memory positions ("PRGM-1" to "PRGM-8") by pressing the CANCEL button. At this time, the preset channel display shows "--" and the frequency display section shows "----", showing that the programmed contents have been cancelled. When program recording is engaged, cancelled programs will be bypassed.

• To release programming

6. While "PRGM-8" is displayed, if the MONITOR button is pressed again, the monitor mode (programming operation mode) will be released. Also, if there is no key input for more than approx. 10 seconds in the monitor mode (programming operation mode), it will be released automatically.

• To change part of the program

7. When any of "PRGM-1" to "PRGM-8" is displayed, if a preset channel number is input with the 10-key keypad, the display changes to show the newly input preset channel number.

Note:

- During programming, the broadcast which is being received immediately before programming starts will continue to be received.

• How to program the reception of one broadcast immediately after another

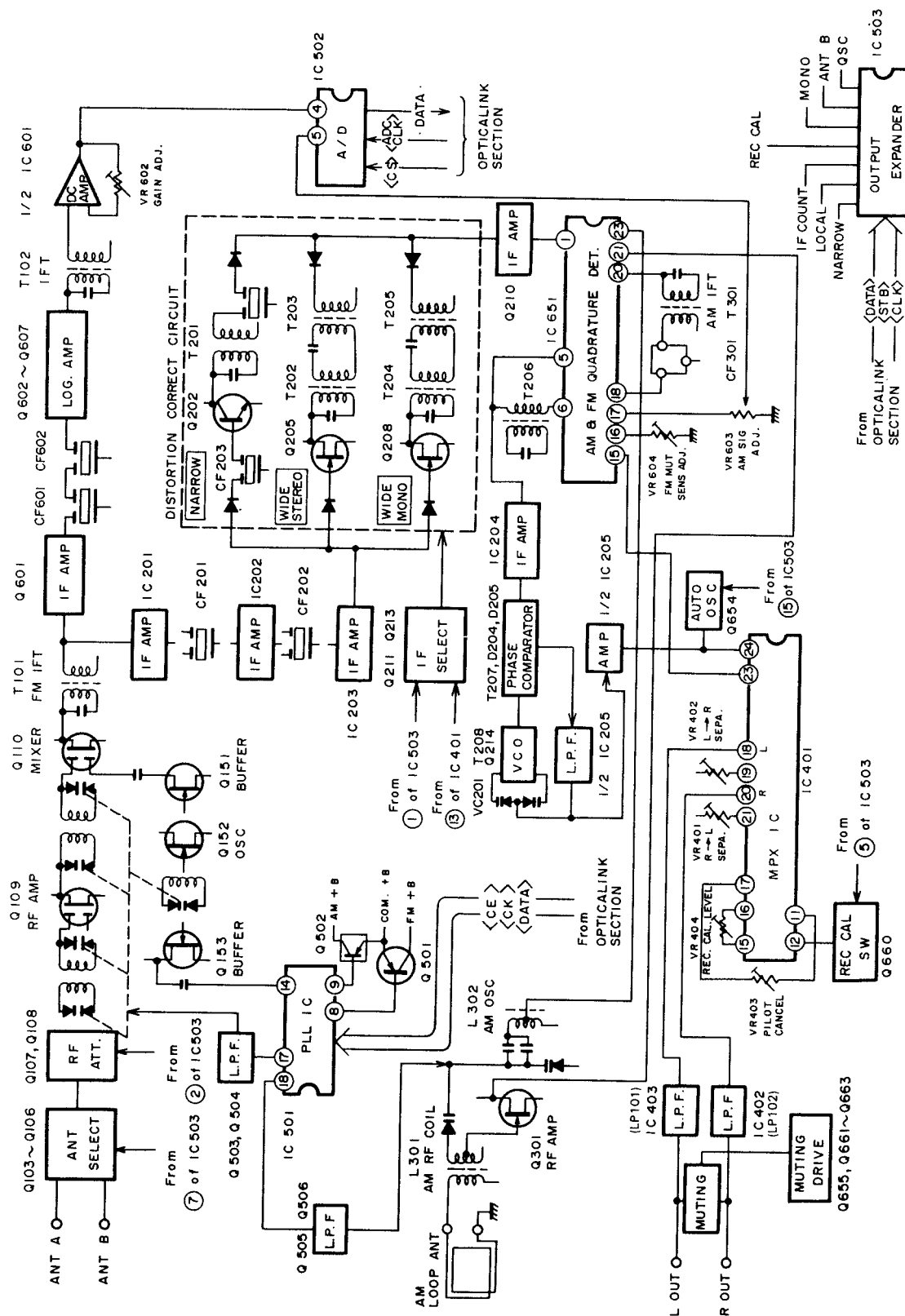
8. Turn the power off using the timer.
To record station A till 8 o'clock and station B from 8 o'clock, automatic selection is impossible; set the timer to turn off at 7:59 and to turn on again at 8:00.

Note:

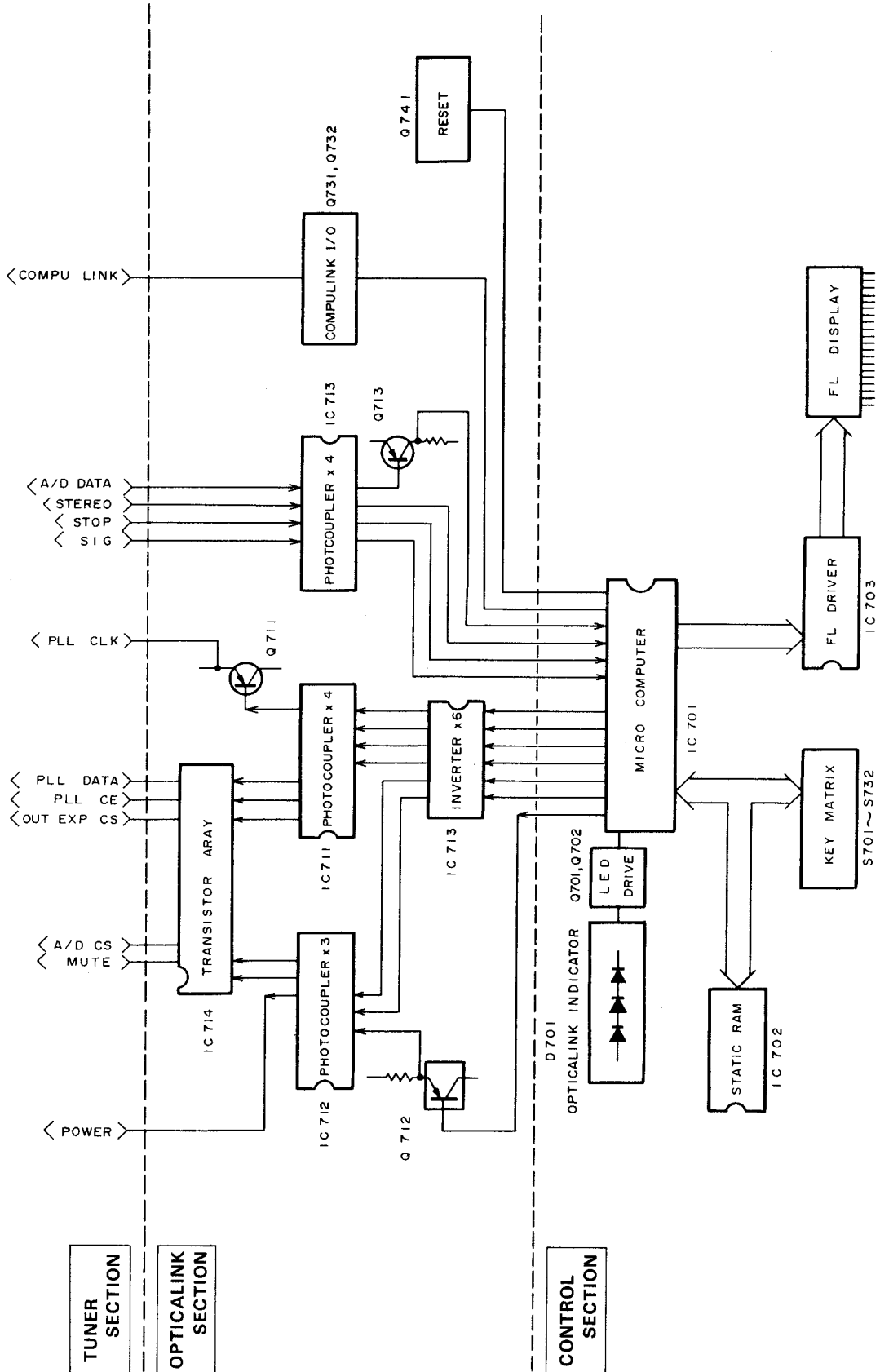
- After the programming has been done (in this condition, the Program indicator will light when the PROGRAM button is pressed) and each time the POWER button is switched ON, the preset programs will be executed in the programmed order sequentially, with the display changing in the order "PRGM-1", "PRGM-2", ... (to "PRGM-8" when the maximum number of programs have been entered).

1. Block Diagrams

■ Tuner Section



■ Logic Section



2. Technical Explanations

Low-Distortion, High S/N Ratio Detector Circuit

1. Construction of PLL Detector

Fig. 1 shows the basic circuit structure of the PLL detector. As shown in the figure, it uses a loop consisting of a phase comparator, low-pass filter and VCO.

If the PLL locks to the frequency of the FM signal, the VCO moves according, following the momentary frequency of the FM input signal. Therefore, the error signal voltage $V_d(t)$ which passes through the filter varies so that the VCO output frequency is locked to that of the input signal. In this way, $V_d(t)$ is equivalent to the FM-decoded audio component. In this case, the linearity of the FM decoder output is determined by the voltage-frequency conversion characteristics of the VCO.

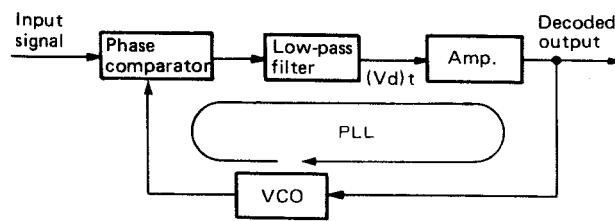


Fig. 1 Block diagram of PLL

2. Features of the Newly Developed PLL Detector

Conventional PLL detectors use a varactor diode which is carefully selected for its good linearity as the voltage variable device to improve the linearity of the VCO. The characteristics of a typical varactor diode are shown below:

$$C_v = \frac{C_0}{(1+2V)^n} \dots\dots\dots (1)$$

where,

V : Counterelectromotive voltage applied to varactor diode

C_0 : Capacitance when $V = 0$

n : 0.3 ~ 0.5 (depending on the type of diode)

When equation (1) is differentiated by V , the result is as follows:

$$\frac{dC_v}{dV} = \frac{n C_0}{0.5(1+2V)^{n+1}}$$

For this reason, accurate linearity cannot be obtained.

To overcome this defect, we use the fact that the feedback capacitance of the FET which is used as an oscillating device in the VCO circuit exhibits non-linearity which is symmetrical to that of the varactor diode at the operating frequency. By combining these two curves, it is possible to obtain a linear VCO. (Fig. 2)

The differential gain characteristic at this time is as shown in Fig. 3, and the decoding distortion at ± 75 kHz deviation becomes 0.005%. This is four times better than the value achieved by conventional tuners.

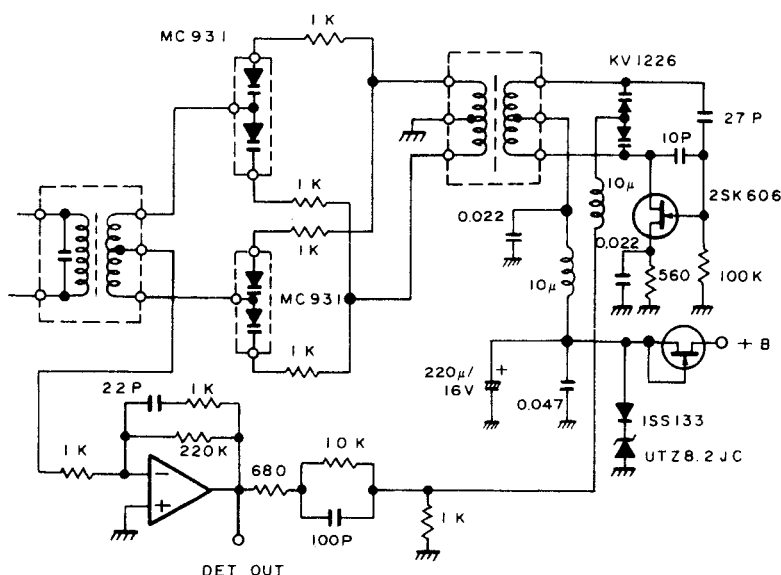


Fig. 2 PLL detector in the FX-1010TN

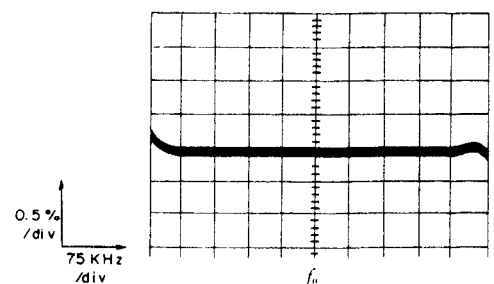


Fig. 3 Differential gain

Beatless MPX (Multiplexer)

1. Effect of the Switching Signals

In the MPX circuit, switching operations with the 38 kHz square wave are performed continuously for stereo decoding. The harmonic components of this 38 kHz square wave and the interference caused by adjacent stations which can not be eliminated by the IF stage generate beats. To reduce these beats, an anti-birdie filter is used in conventional tuners, however, this also causes separation to deteriorate at high frequencies. For this reason, in the FX-1010TN, the switching signal is produced in such a way as not to generate the 3rd harmonic component of the 38 kHz square wave, which causes the beats.

2. Principle of the Beatless MPX

A block diagram of the beatless MPX is shown in Fig. 4. A qualitative explanation of the principle of the elimination of beats is as follows:

We used that fact that the beat signals appearing at the outputs of the multipliers M₁, M₂ are out of phase with each other. Beat signals are reduced by adding the out-of-phase outputs of M₂, M₁ to the results multiplied by M₃, M₄.

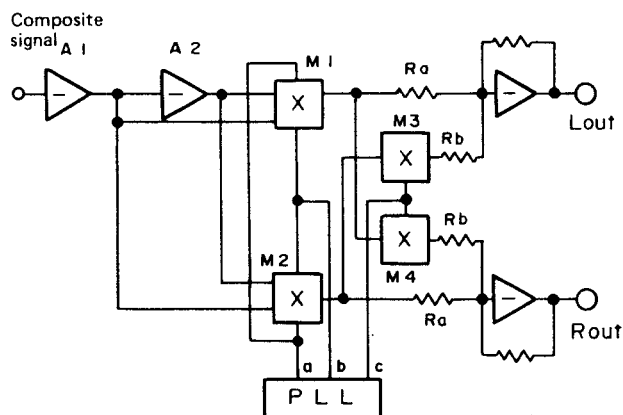
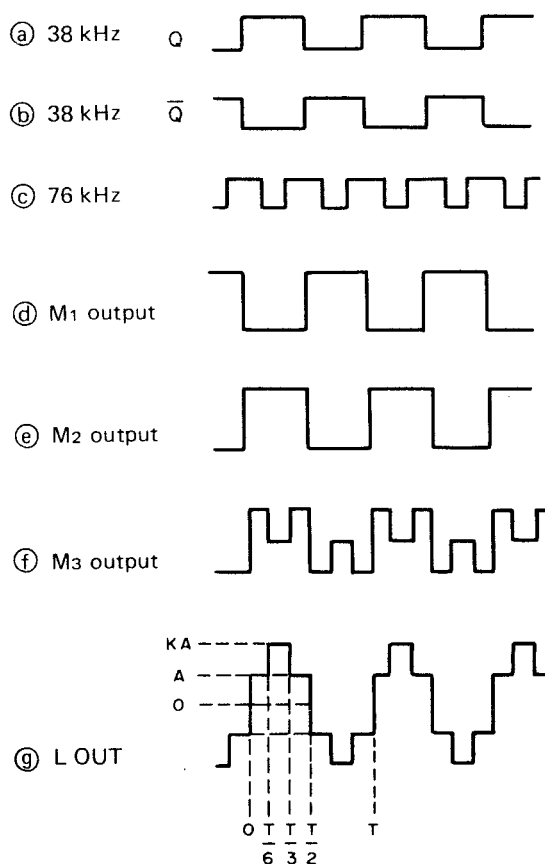


Fig. 4 Block diagram of beatless MPX

The switching signals of the 38 kHz, 50% duty square waves (a), (b) and 76 kHz square wave (c) which are generated in the PLL are applied to the multipliers M₁, M₂, and M₃, M₄. As a result, the signals (d), (e) are present at the outputs of M₁, M₂ and the signal (f) which is the result multiplied by (e) and (c) is present at the output of M₃.

M₁'s output signal (d) and M₃'s output signal (f) are blended by resistors R_a, R_b, and as a result, output signal (g) is present at the L output. In the same way, the signal which is out of phase with (g) is present at the R output.

Then, a Fourier transformation is performed on waveform (g).



$$g = -(m \cdot d + n \cdot f)$$

where, m and n are blending ratios, which can be represented by:

$$m : n = R_a : R_b = 1 : K$$

Fig. 5 Operating waveforms

The Fourier series is derived from the following equations:

$$\left. \begin{aligned} f(t) &= \sum_{m=0}^{\infty} b_{2m+1} \cos(2m+1)\omega t + \sum_{m=0}^{\infty} a_{2m+1} \sin(2m+1)\omega t \\ b_{2m+1} &= \frac{4}{T} \int_0^{T/2} f(t) \cos(2m+1)\omega t dt \quad (\omega T = 2\pi) \\ a_{2m+1} &= \frac{4}{T} \int_0^{T/2} f(t) \sin(2m+1)\omega t dt \quad (m = 0, 1, 2, \dots) \end{aligned} \right\} (1)$$

$$\begin{aligned} f(t) &= A & 0 \leq t \leq \frac{T}{6} \\ f(t) &= KA & \frac{T}{6} \leq t \leq \frac{T}{3} \\ f(t) &= A & \frac{T}{3} \leq t \leq \frac{T}{2} \end{aligned}$$

$$\begin{aligned} a_{2m+1} &= \frac{4}{T} \left[\int_0^{T/6} A \sin(2m+1)\omega t dt + \int_{T/6}^{T/3} KA \sin(2m+1)\omega t dt \right. \\ &\quad \left. + \int_{T/3}^{T/2} A \sin(2m+1)\omega t dt \right] \\ &= \frac{4}{T} \left[\int_0^{T/2} A \sin(2m+1)\omega t dt + \int_{T/6}^{T/3} (K-1) A \sin(2m+1)\omega t dt \right] \quad (2) \end{aligned}$$

$$\int_0^{T/2} \sin(2m+1)\omega t dt = \frac{2}{(2m+1)\omega}$$

$$\int_{T/6}^{T/3} \sin(2m+1)\omega t dt = \frac{2}{(2m+1)\omega} \cos(2m+1) \frac{\pi}{3}$$

$$\therefore a_{2m+1} = \frac{4A}{\pi(2m+1)} \left\{ 1 + (K-1) \cos(2m+1) \frac{\pi}{3} \right\} \quad (3)$$

$$\text{on the other hand, } b_{2m+1} = 0 \quad (4)$$

When the Fourier series is derived from equation (3), it becomes as follows:

$$m=0 \quad a_1 = \frac{4A}{\pi} \left\{ 1 + \frac{K-1}{2} \right\} = \frac{2A}{\pi} (K+1) \quad (5)$$

$$m=1 \quad a_3 = \frac{4A}{3\pi} \left\{ 1 + (K-1) \cdot (-1) \right\} = \frac{4A}{3\pi} (2-K) \quad (6)$$

$$m=2 \quad a_5 = \frac{4A}{5\pi} \left\{ 1 + (K-1) \cos \frac{5}{3} \pi \right\} = \frac{2A}{5\pi} (K+1) \quad (7)$$

Then, when $a_3 = 0$, the following value K is derived:

$$\frac{4A}{3\pi} (2-K) = 0$$

$$\therefore K = 2 \quad (8)$$

On the other hand, since K is the blending ratio between the M_1 (or M_2) output and the M_3 (or M_4) output, and $R_a : R_b = 1 : K$,

$$R_b = KR_a = 2R_a$$

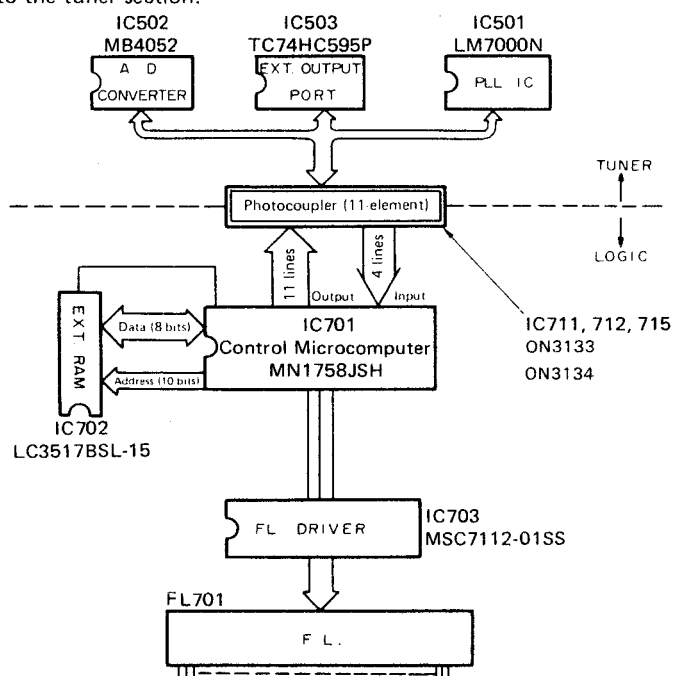
If the above values are set, the third harmonic component will be eliminated.

Summarizing the above, this beat canceller blends the input signal multiplied by M_1 (or M_2) and the signal resulting from the multiplication of M_2 (or M_1) and M_3 (or M_4); the signal obtained in this way is equivalent to the signal resulting from the multiplication of the input signal by the signal from which 3rd harmonic components of the 38 kHz have been eliminated.

When the Fourier series is derived from equation (3), it becomes as follows:

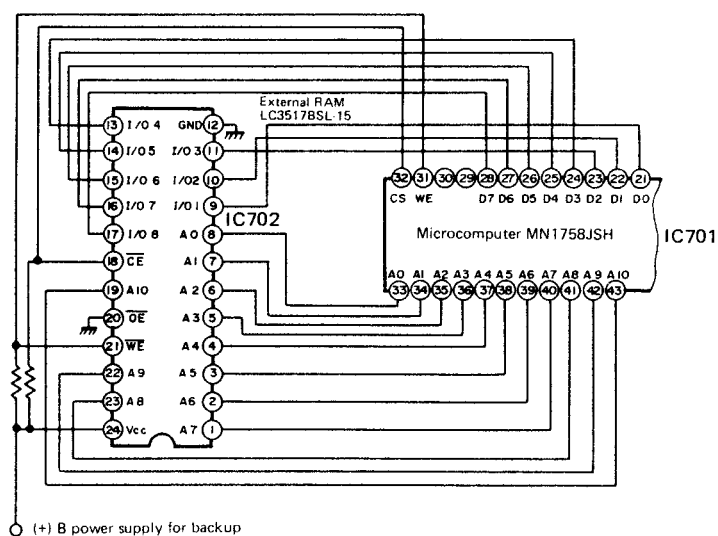
OPTICALINK Digital Tuning System

In the digital tuning system employed by this unit, an optical transmission system is used between the tuner circuit and the logic circuit, to prevent noise from the logic section from being introduced to the tuner section.



Connections between Microcomputer and External RAM

In this unit, since the frequency, station name display and mode setting, etc. are also stored in memory for each of the 40 preset stations, an additional RAM is externally connected to the main microcomputer to provide additional memory capacity.



3. Removal Procedures

Removal Procedures

(1) Removing the Top Cover

1. Remove the six screws **1** retaining the top cover.
2. While pulling the lower end at sides of the top cover slightly outwards, lift the rear of the top cover to remove it.

(2) Removing the Front Panel

1. Remove the top cover. (Refer to the above description.)
2. Pull out the three plastic rivets **2** retaining the top of the front panel.
3. Remove the three screws **3** retaining the bottom of the front panel.

(3) Removing the Bottom Board

1. Remove the 13 screws **4** retaining the bottom board.

(4) Removing the Tuner PC Board

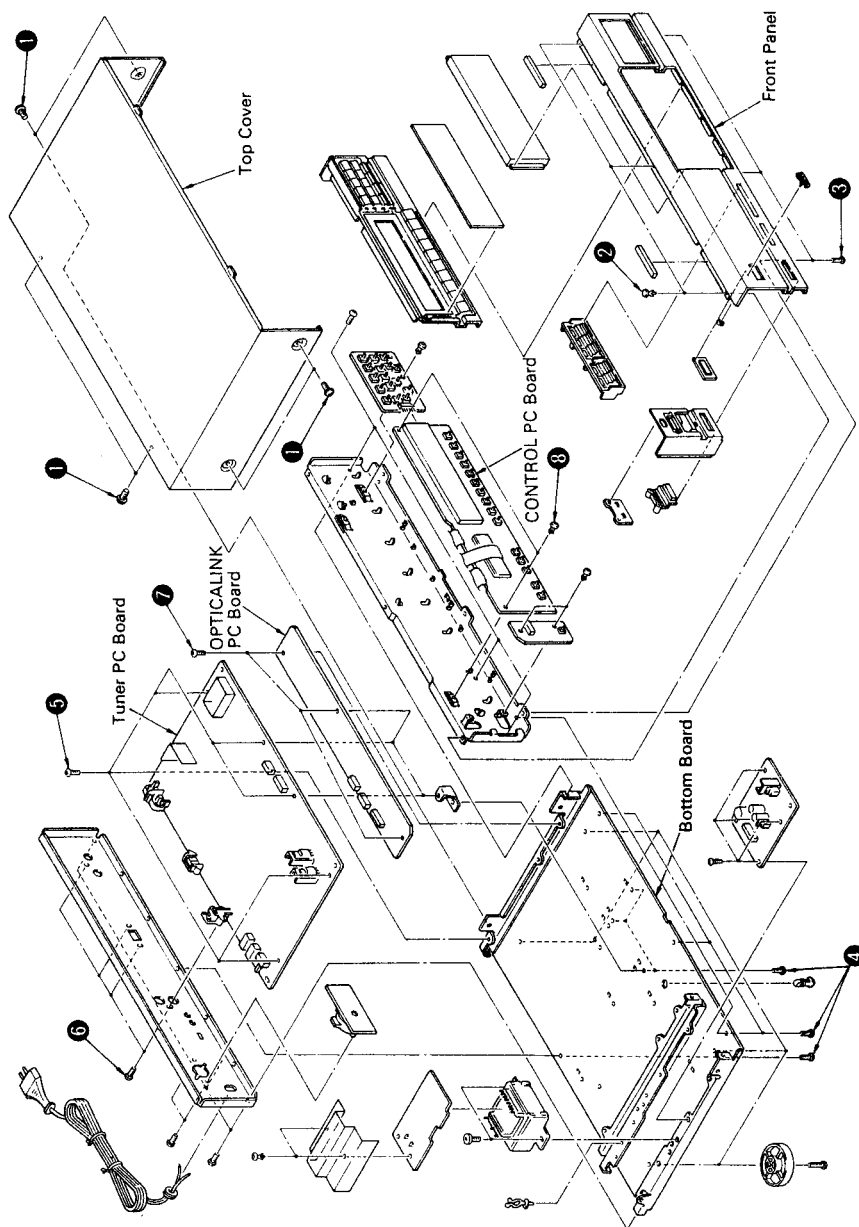
1. Remove the top cover. (Refer to the description above.)
2. Remove the six screws **5** retaining the tuner PC board.
3. Remove the four screws **6** retaining the terminals and jacks from the rear panel.

(5) Removing the OPTICALINK PC Board

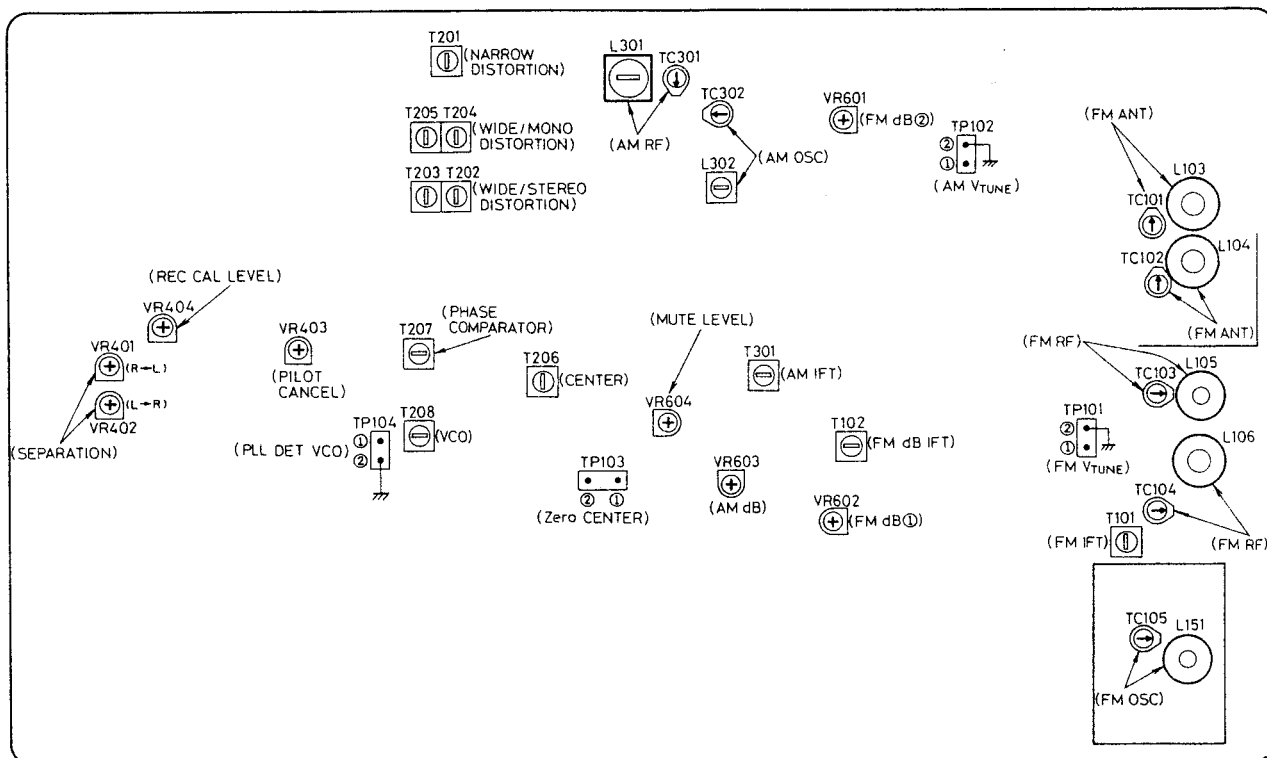
1. Remove the top cover. (Refer to the description above.)
2. Remove the three screws **7** retaining the OPTICALINK PC board.

(6) Removing the CONTROL PC Board

1. Remove the top cover. (Refer to the description above.)
2. Remove the two plastic rivets **8** retaining the front PC board from the front.



4. Location of Adjusting Parts

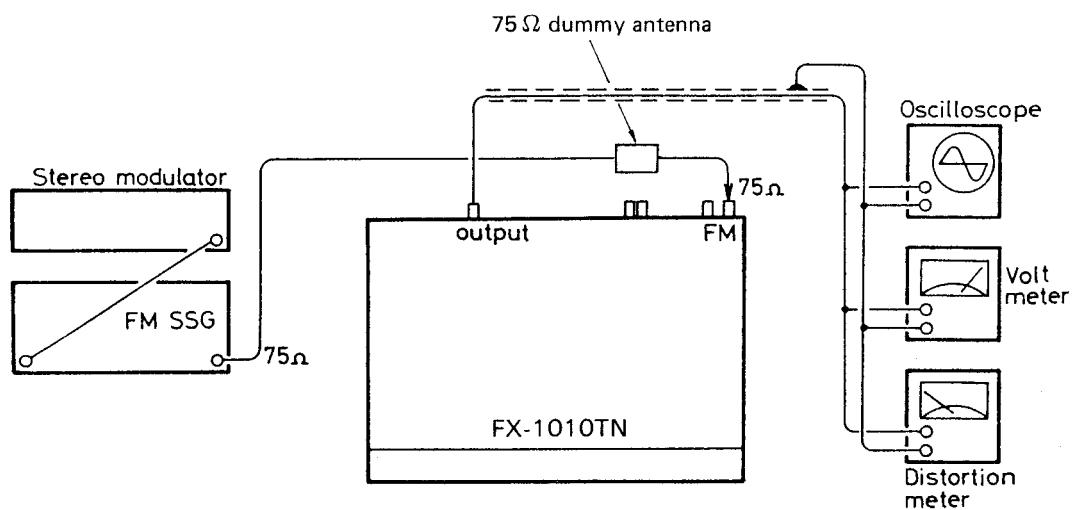


Note: T207 and T301 are factory preset and normally does not require field adjustment.

5. Adjustment Procedures

To adjust the cores, use an adjusting rod made of bakelite, polycarbonate or other nonmetallic materials.

[FM Section]



Condition

- Perform the following adjustments for the ANT-A input with RF MODE set to DX.

1. Local oscillator frequency adjustment

- (1) Adjust the local oscillator coil L151 so that the FM tuning voltage (TP101) reads $V_{TU} = 7.5 \pm 0.1$ V when receiving a frequency of 87.5 MHz.
- (2) Adjust the local oscillator trimmer TC105 so that $V_{TU} = 22.0 \pm 0.1$ V is obtained when receiving a frequency of 108.0 MHz.
- (3) Repeat operations (1) and (2) so that the value of V_{TU} is within the specified range for both 87.5 MHz and 108 MHz.

2. Tracking adjustment

- (1) Adjust L103, L104, L105 and L106 so that the optimum sensitivity is obtained when a frequency of 89.9 MHz is received.
- (2) Adjust TC101, TC102, TC103 and TC104 so that the optimum sensitivity is obtained when a frequency of 105.9 MHz is received.
- (3) Repeat operations (1) and (2) so that the optimum sensitivity is obtained.
- (4) Adjust the IF (intermediate frequency) transformer T101 to obtain the optimum sensitivity.

3. PLL detector VCO adjustment

- (1) Set the receiving band to AM.
- (2) Connect a frequency counter (use 1/10 attenuator probe.) to TP104, and adjust T208 so that the oscillation frequency becomes 10.7 ± 0.01 MHz.

4. FM dB adjustment

- (1) Tune to a frequency of 100.1 MHz and set the SSG attenuator (ATT) to 70 dB (Emf).
- (2) Turn VR602 so that the dB display shows 74 dB.
- (3) Set the attenuator to 30 dB (Emf) and turn VR601 so that the dB display shows 24 dB.
- (4) Repeat operations (2) and (3) so that the dB display shows 74 ± 1 dB when ATT is set to 70 dB (Emf), and 24 ± 1 dB when ATT is set to 30 dB (Emf).

5. Monaural distortion in IF WIDE mode

- (1) Tune to a frequency of 100.1 MHz, and set the attenuator (ATT) to 70 dB.
- (2) Set the FM IF bandwidth to WIDE with the FM IF switch.
- (3) Turn T204 (core colored black) so that the distortion rate is minimum.

Note: Be sure to use a screwdriver with a suitable tip length so as not to crack the cores. Do not apply excessive force to the cores.

6. Stereo distortion in IF WIDE mode

- (1) Set the attenuator to 70 dB, and tune to a frequency of 98.1 MHz.
- (2) Press the FM MODE/MUTE switch to set to AUTO.
(In this case, the FM IF bandwidth should be WIDE.)
- (3) Turn T202 (core colored black) so that the distortion becomes minimum when a 1 kHz (L channel) signal is input.

Note: Make sure the "QSC" indicator is not lit in the FL display.

7. Stereo distortion adjustment in IF NARROW mode

- (1) With the attenuator set to 70 dB, tune to a frequency of 98.1 MHz.
- (2) Press the FM IF switch to set the FM IF bandwidth to NARROW.
- (3) Turn T201 (core colored black) so that the distortion becomes minimum when a 1 kHz signal (L channel) is input.

Note: Make sure the "QSC" indicator is not lit in the FL display.

8. Zero-center adjustment

- (1) Tune to a frequency of 100.1 MHz, and connect the digital voltmeter to TP103.
- (2) Press the FM IF switch to set the FM IF bandwidth to NARROW.
- (3) Adjust T206 so that the center voltage is 0 ± 1.5 mV.

9. Muting level adjustment

- (1) Press the FM MODE/MUTE switch to set to AUTO.
- (2) Leave the IF bandwidth set to NARROW and tune to 89.9 MHz.
- (3) Connect an oscilloscope (DC-coupled) to IC651 pin 8 or to anode of D673, and set the SSG attenuator (ATT) to 10 dB (Emf).
- (4) First turn VR604 fully clockwise and then turn it gradually counterclockwise until the DC level in (3) is inverted from high to low.

10. Separation adjustment

- (1) After setting the attenuator to 70 dB, receive 98.1 MHz and set the IF bandwidth to WIDE.
- (2) Adjust VR401 and VR402 so that crosstalk from the R channel to the L channel and from the L channel to the R channel are both minimum.

Note: Make sure the "QSC" indicator is not lit in the FL display.

11. Pilot cancel adjustment (except for West Germany)

- (1) After adjusting the stereo separation in item 10, adjust VR403 so that the leakage of the pilot signal (19 kHz) becomes minimum and the same level for the left and right channels.

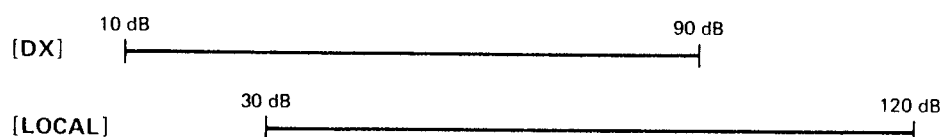
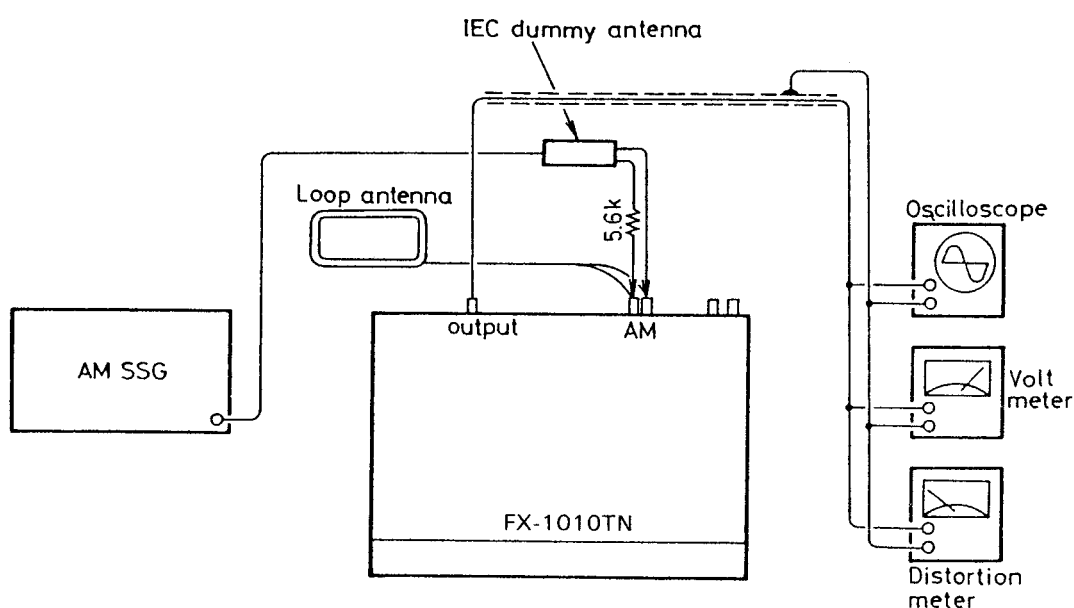
12. REC CAL level adjustment

- (1) Tune to 100.1 MHz, set the attenuator to 70 dB, and set the modulator to 100%.
- (2) Read the output voltage in this condition, and set the REC CAL switch to ON.
- (3) Adjust VR404 so that the REC CAL signal level becomes -6 dB.

FM Field Strength Display

The FX-1010TN has a function which measures the electric field strength and displays it in dB. However, the measurement range is different depending on the RF mode. Especially, in areas where the field strength is more than 90 dB, set the RF mode to [LOCAL] to obtain a more correct reading of the field strength.

With field strength between 30 and 90 dB, the figure displayed may differ between the [DX] and [LOCAL] modes. It is recommended that you measure the field strength in the [DX] mode in areas where the field strength is under 90 dB.

*** FM field strength measurement ranges****[AM Section]****Condition**

- Connect the provided loop antenna and IEC dummy antenna to the AM ANT terminal.

1. Local oscillator frequency adjustment

- (1) Tune to 522 kHz [or 530 kHz] and adjust L302 (local oscillator) so that the AM tuning voltage (TP102) reads $V_{TU} = 1.8 \pm 0.1$ V [or $V_{TU} = 2.0 \pm 0.1$ V].
- (2) Tune to 1710 kHz [or 1629 kHz, 1630 kHz] and adjust TC302 so that $V_{TU} = 22.0 \pm 0.1$ V [or $V_{TU} = 20.0 \pm 0.1$ V] is obtained.
- (3) Repeat operations (1) and (2) to obtain the maximum sensitivity.

2. Tracking adjustment

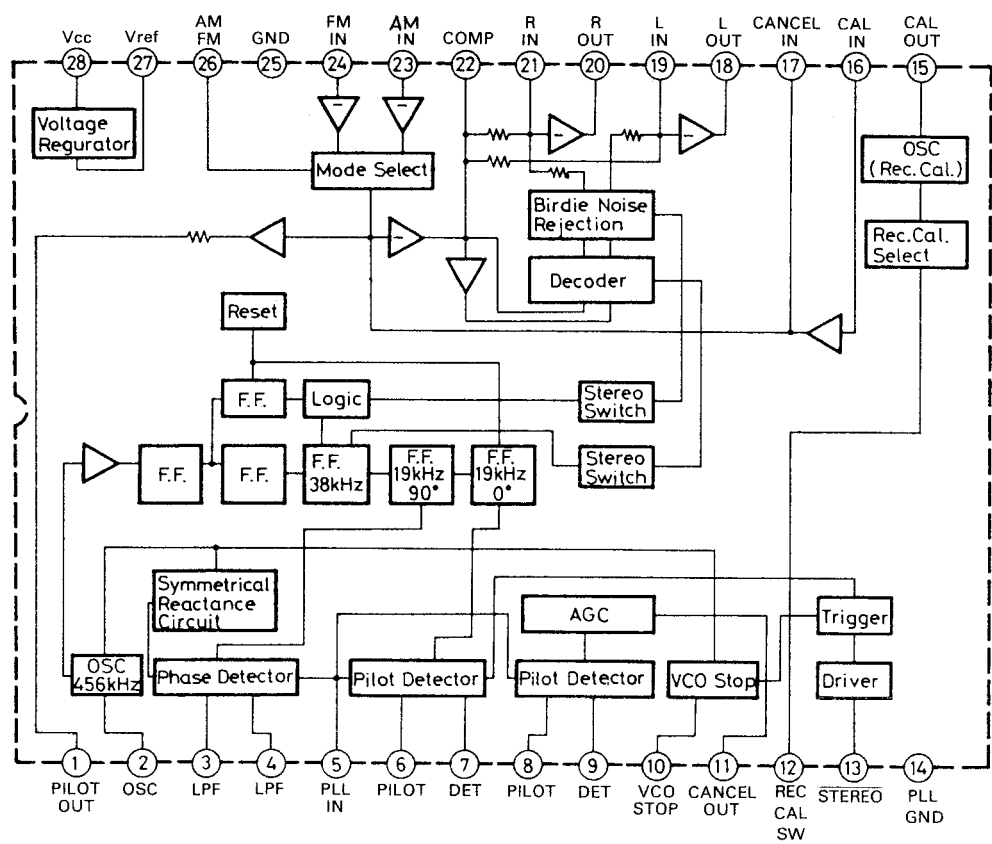
- (1) Set the ANT trimmer TC301 to its center position.
- (2) Receive 603 kHz [or 600 kHz] and adjust matching coil L301 so that the sensitivity becomes optimum.
- (3) Receive 1404 kHz [or 1400 kHz], and adjust the ANT trimmer TC301 so that the optimum sensitivity is obtained.
- (4) Repeat operations (2) and (3) to obtain the optimum sensitivity.

3. AM dB adjustment

- (1) Tune to 999 kHz [or 1000 kHz] and set the attenuator to 90 dB.
- (2) Adjust VR603 so that the dB display shows 92 dB.

6. Descriptions of Major LSI ICs

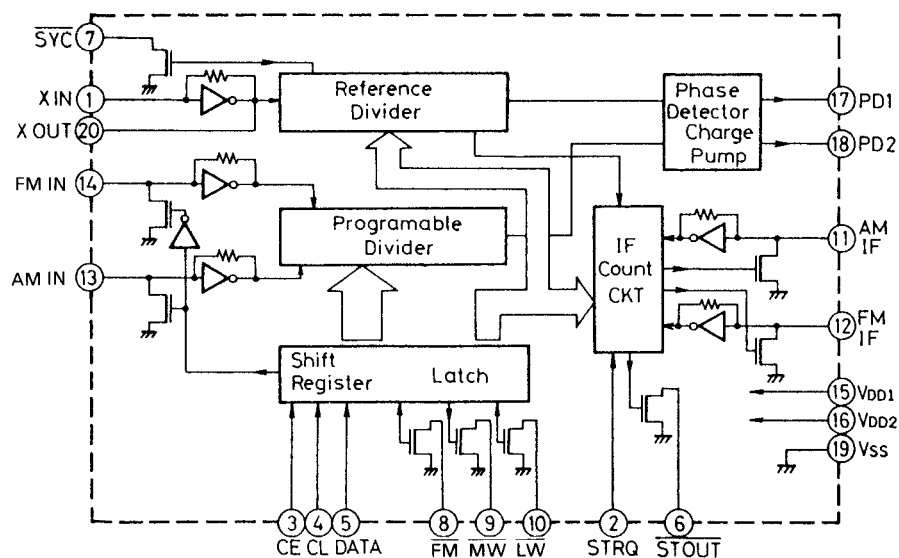
IC401 : LA3450 (Multiplex)



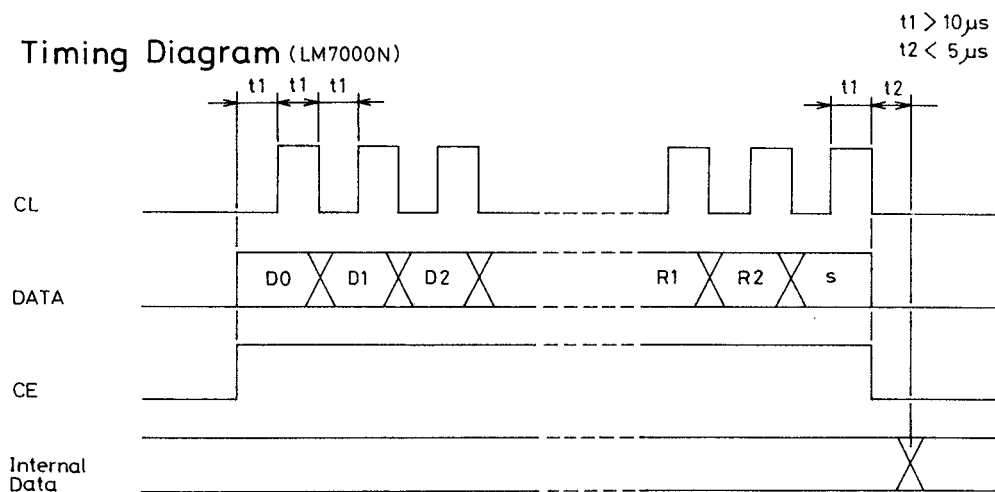
Pin No.	Terminal Function
1	Composite amplifier output
2	Oscillator
3	Loop filter
4	Loop filter
5	PLL input
6	Pilot synchronous detection filter
7	Pilot synchronous detection filter
8	Pilot synchronous detection filter
9	Pilot synchronous detection filter
10	VCO stop
11	Pilot cancel
12	Rec. Cal. (Recording Calibrator) control
13	Stereo indicator
14	Ground

Pin No.	Terminal Function
15	Rec. Cal. oscillator output
16	Rec. Cal. input
17	Pilot cancel input
18	Post amplifier output
19	Post amplifier input
20	Post amplifier output
21	Post amplifier input
22	Separation adjustment
23	AM input
24	FM input
25	Signal ground
26	AM / FM selector
27	Vref.
28	Power supply

IC501 : LM7000N (PLL)

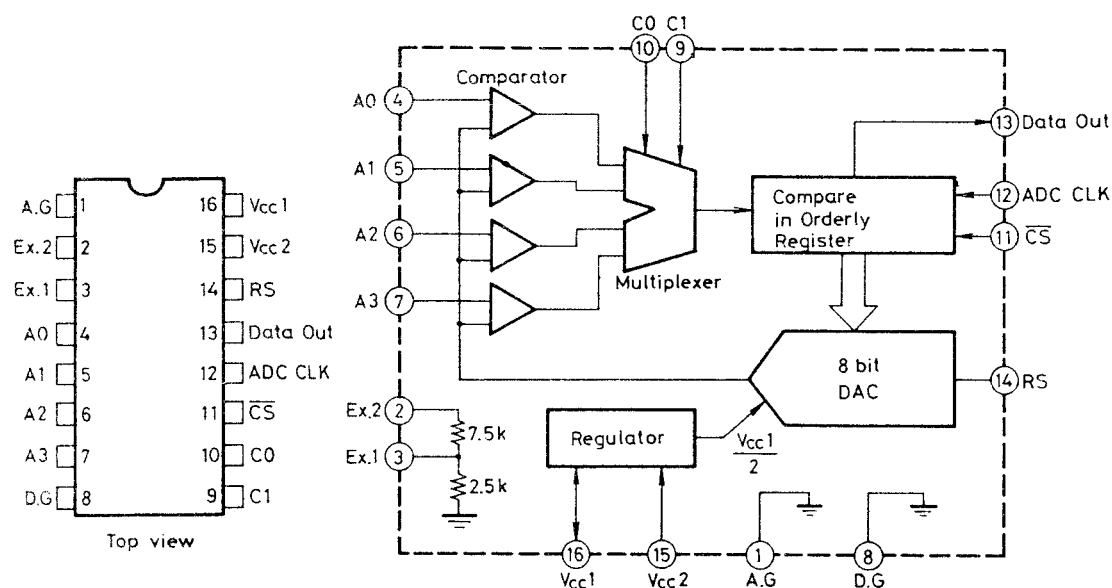


Timing Diagram (LM7000N)

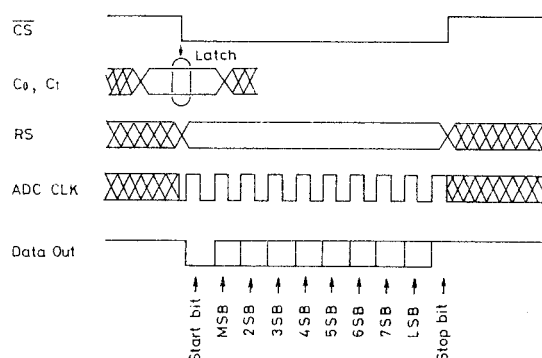


Terminal name	Terminal Function
SYC	Clock (400kHz) for controller
XIN, XOUT	Crystal oscillator (7.2 MHz) Included the feedback resistor.
FM IN, AM IN	Local oscillator signal input
CE, CL, DATA	Data input
FM, MW, LW	Band data output
STRQ	Request of IF counter input
STOUT	Auto-search stop signal output
Vdd1, Vdd2, Vss	Power supply (Vdd2 : for back-up)
AMIF, FMIF	IF signal input
PD1, PD2	Charge pump output

IC502 : MB4052 (A/D Converter)

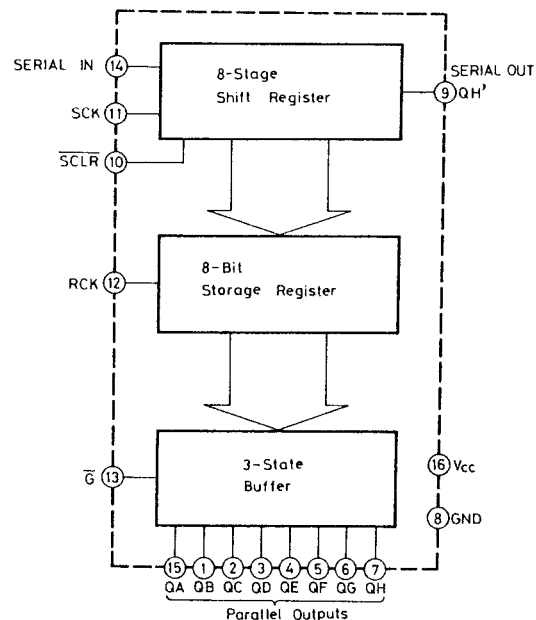
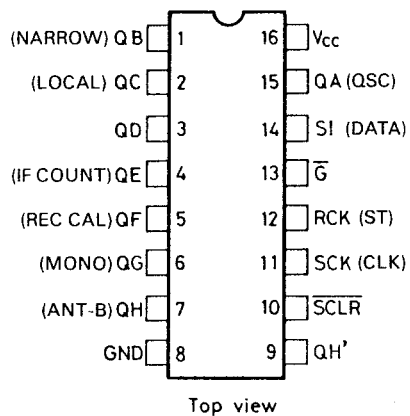


Timing Diagram (MB4052)

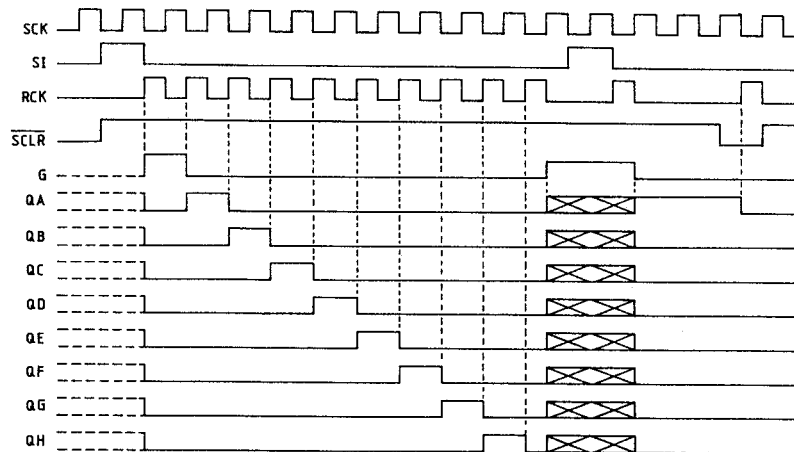


Pin No.	Pin Name	Symbol	Function
2 3	Range expansion input Range expansion output	Ex.2 Ex.1	Analog input pin for expanding the range. Analog output pin for expanding the range.
4 ~ 7	Analog input	A0 ~ A3	4-ch analog input pins. One channel of these is selected by the channel designation input C0, C1.
9 10	Channel designation input	C1 C0	Input pin for designating the analog input pin for A/D conversion. This signal is latched at the trailing edge of CS.
11	Chip select input	$\overline{CS}$	Chip select input pin. When the CS signal is changed from "1" to "0", the A/D conversion starts and the data output pin enters the enable status. When A/D conversion is completed, or when an interruption is required, set CS to "1".
12	A/D conversion clock	ADC CLK	Clock input pin for A/D conversion to be input to the successive approximation register. The conversion rate is determined by the rate of this clock; a clock of approx. 10MHz is required for 8-bit conversion. However, it is not necessary to fix the clock rate.
13	Data output	Data Out	Pin which outputs the results of A/D conversion (open collector). Output data is synchronized with the ADC CLK signal in the order, start bit, MSB, 2SB, ..., LSB, stop bit.
14	Range select input	RS	Input pin for selecting the analog input voltage range. $V_{fs}-V_{cc1}/8$ range is selected at "0", and $V_{fs}-V_{cc1}/2$ range is selected at "1". During converting, this pin is held at "0" or "1".
1 8	Analog ground Digital ground	A.G D.G	Analog ground pin Digital ground pin
15 16	Power supply pin 2 Power supply pin 1	Vcc2 Vcc1	When operated with a 3.5 to 6.0 V power supply, the power voltage is applied with Vcc1 and Vcc2 connected to each other.

IC503 : TC74HC595AP (Shift Register)



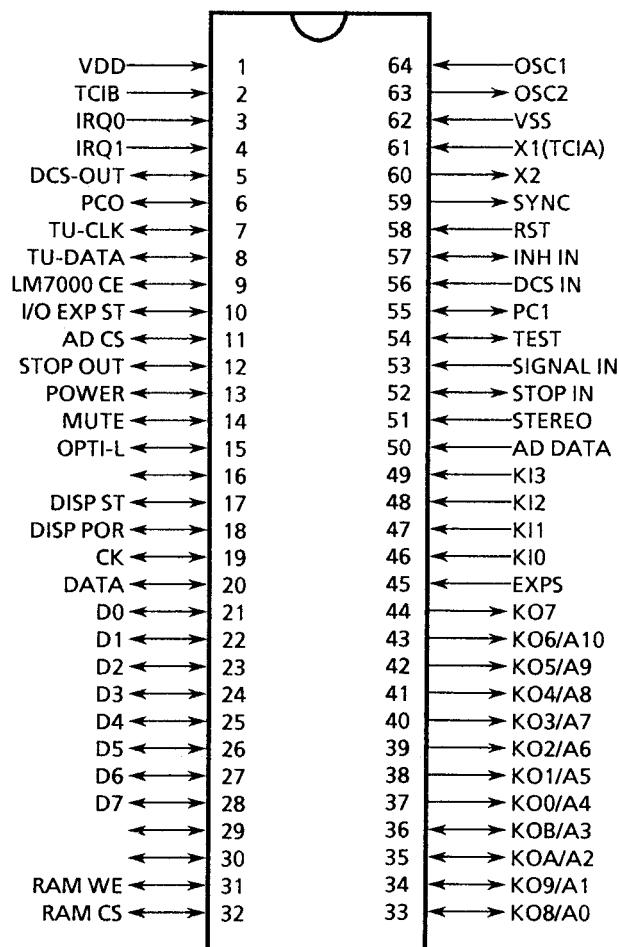
Timing Diagram (TC74HC595AP)



Truth Table

Inputs					Function
SI	SCK	SCLR	RCK	$\bar{G}$	
X	X	X	X	H	Output (QA~QH) disabled
X	X	X	X	L	Output (QA~QH) enabled
X	X	L	X	X	Shift register is cleared
L		H	X	X	The primary stage of the shift register is low; Each of others stores the data of the previous stage.
H		H	X	X	The primary stage of the shift register is high; Each of others stores the data of the previous stage.
X		H	X	X	Shift register does not change.
X	X	X		X	The data in the shift register is stored in the storage register.
X	X	X		X	Storage register does not change.

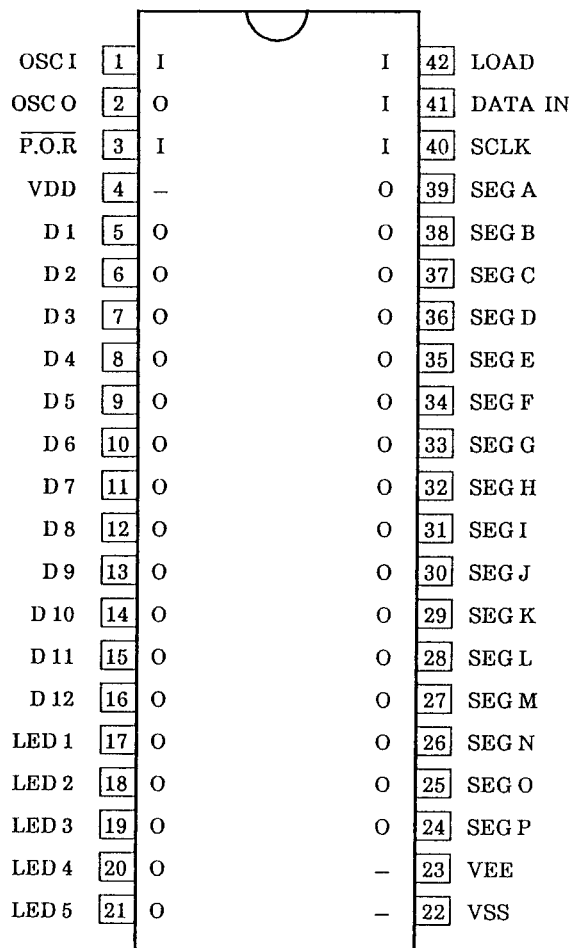
IC701 : MN1758JSH (System Microcomputer)



No.	Symbol	I/O	Terminal Function
1	Vdd	-	Connect the positive power supply.
2	TCIB	I	External clock input pin for timer counter B.
3	IRQ0	I	External interruption input pin. When the negative edge is detected, the vector interruption is engaged.
4	IRQ1	I	
5	DCS OUT	I/O	Input/output pins for 4-bit parallel data. I/O setting can be changed in bit or port units by programming.
20	DATA	I/O	
21	D0	I/O	Input/output pins for 4-bit parallel data. I/O setting can be changed in port units by programming.
36	KOB/A3	I/O	
37	KO0/A4	O	Output pins for 4-bit parallel data.
44	KO7	O	
45	EXPS	I	External RAM expansion pin. When it is set at low level, the expansion mode is engaged.
46	KI0	I	Input pins for 4-bit parallel data.
49	KI3	I	
50	AD DATA	I	Input pins for 4-bit parallel data.
51	STEREO	I	
52	STOP IN	I/O	Serial clock input/output pin to shift buffer B. Output status is activated by the internal clock mode, and input status is activated by the external clock mode.

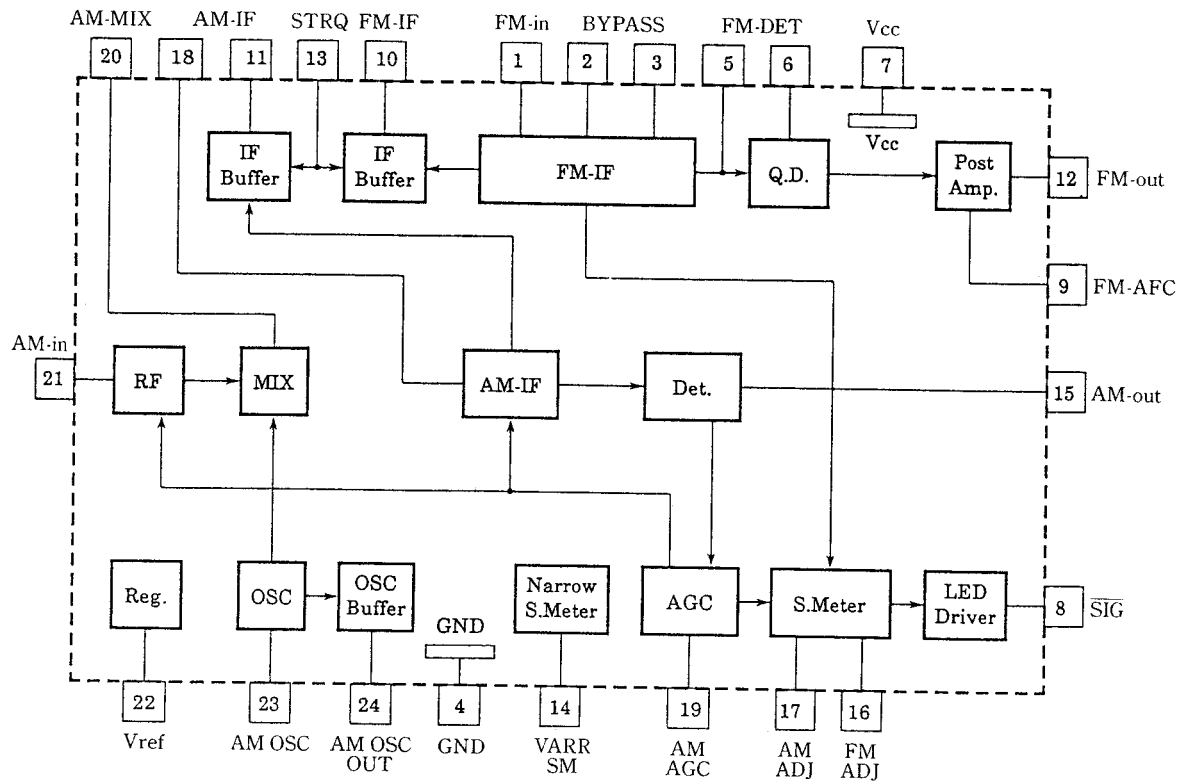
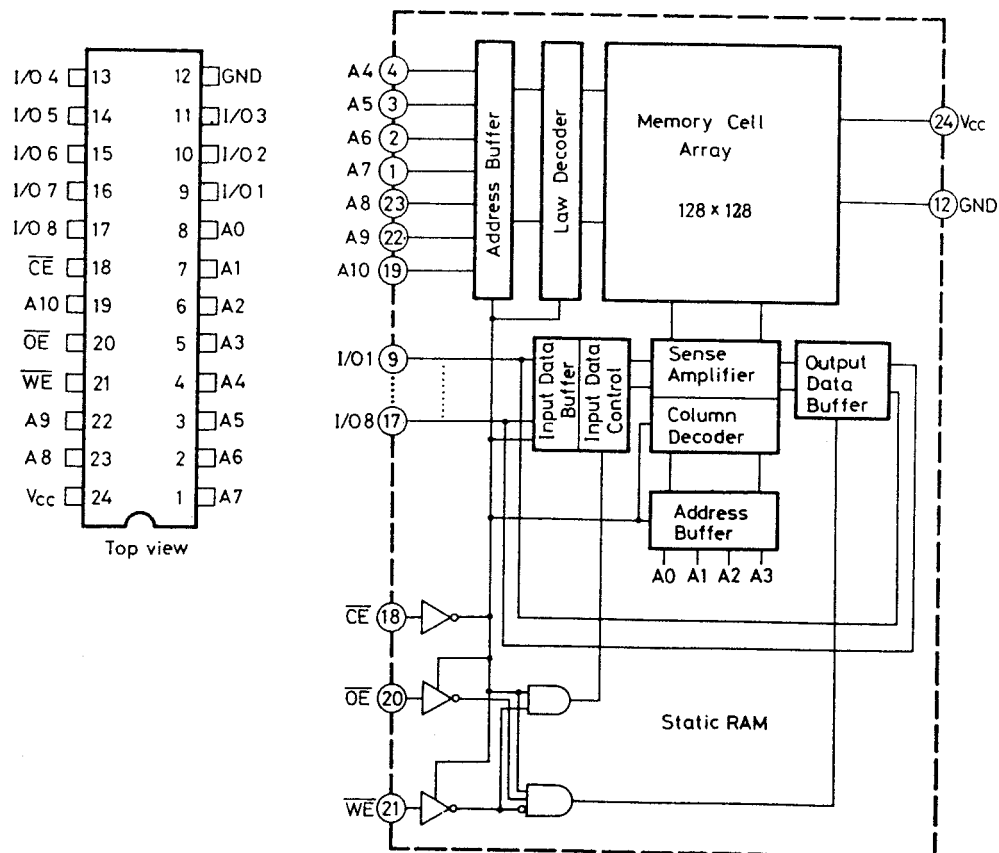
No.	Symbol	I/O	Terminal Function
53	SIG. IN	I	Serial data input pin to shift buffer B.
54	TEST	I/O	Serial data output pin from shift buffer B.
55	PC1	I/O	Serial clock input/output pin to shift buffer A. Output status is activated by the internal clock mode, and input status is activated by the external clock mode.
56	DCS IN	I	Serial data input pin to shift buffer A.
57	INH IN	I/O	Serial data output pin from shift buffer A.
58	RST	I	System reset input pin. When a low level signal is applied for more than 1 machine cycle, it will be reset.
59	SYNC	O	Sync signal output pin. The internal timing signal CP3 is output every 1 machine cycle. The duty of the low level signal is 1/4.
60	X2	O	Connect a crystal timer clock oscillator. When an external clock is used, input it to X1 (TCIA). X1 is also used as the external clock input for the timer counter A (TCIA). A feedback resistor is incorporated between X1 and X2.
61	X1(TCIA)	I	
62	Vss	-	Connect the ground (0 V).
63	OSC2	O	Connect a crystal system clock oscillator. When an external clock is used, input it to OSC1. A feedback resistor is incorporated between OSC1 and OSC2.
64	OSC1	I	

IC703 : MSC7112-01SS (Display Controller)

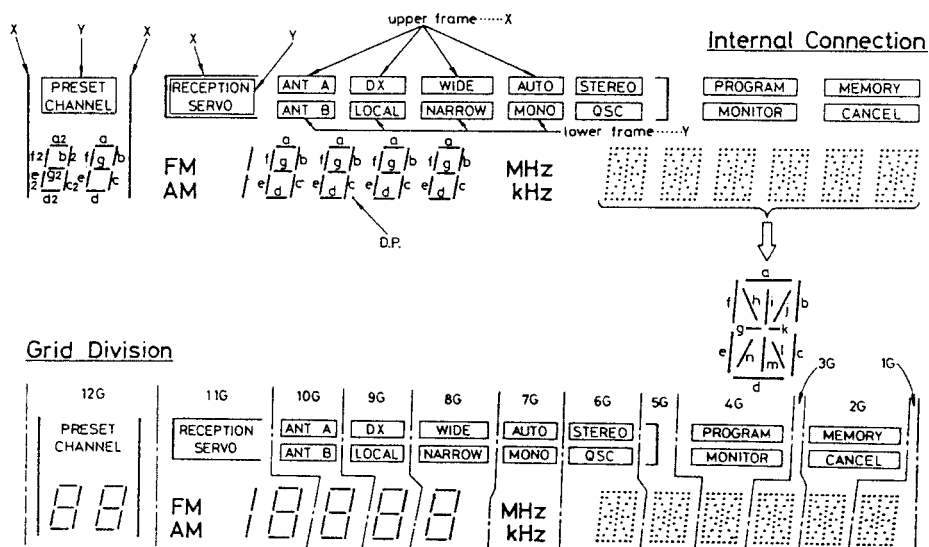


No.	Symbol	I/O	Terminal Function
1 2	OSC I OSC O	I O	Oscillation circuit input. When a resistor and capacitor are connected externally, they can form the oscillation circuit. $C = 100 \text{ pF}$ $R = 27 \text{ kohms}$ $f_{osc} = 350 \text{ kHz} \pm 20 \%$
3	P.O.R.	I	
4 22 23	Vdd Vss Vee	— — —	Vdd - Vss : power supply for internal logic. Vdd - Vee : power supply for VF drive logic.
5 ↓ ↓ 16	D1 D2 D12	O O O	VF optical display drive output. Complementary output

No.	Symbol	I/O	Terminal Function
17 ↓ ↓ 21	LED 1 LED 2 LED 5	O O O	LED drive output. Complementary output
24 ↓ ↓ 39	SEG P SEG Q SEG A	O O O	VF display drive output. Complementary output
40	S CLK	I	Shift clock of the shift register. Data is shifted at the trailing edge of SCLK.
41	DATA IN	I	Display data input of the shift register. Input from the MSB(positive logic).
42	LOAD	I	Latch clock of the display data. The latched data passes through when LOAD is high, and the data immediately before the high level is latched when it is low.

IC651 : LA1266A (FM IF & AM)**IC702 : LC3517BSL-15 (Static RAM)**

7. Description of FL Display



Internal Connection (FL701:ELU0001-042)

SEG/GRID	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
a	a	a	a	a	a	---	a	a	a	a	a	a
b	b	b	b	b	b	---	b	b	b	b	b	b
c	c	c	c	c	c	---	c	c	c	c	c	c
d	d	d	d	d	d	---	d	d	d	d	d	d
e	e	e	e	e	e	---	e	e	e	e	e	e
f	f	f	f	f	f	---	f	f	f	f	f	f
g	g	g	g	g	g	---	g	g	g	g	g	g
X			upper frame	upper frame	upper frame	upper frame	STEREO	]	PROGRAM	---	MEMORY	---
n	f2	AM	---	---	---	kHz	n	n	n	n	n	n
■	a2	/	---	---	---	---	■	■	■	■	■	■
l	b2	FM	• (D.P.)	---	---	MHz	l	l	l	l	l	l
k	g2	---	---	---	---	---	k	k	k	k	k	k
j	c2	---	---	---	---	---	j	j	j	j	j	j
i	d2	---	ANT A ANT B	DX LOCAL	WIDE NARROW	AUTO MONO	i	i	i	i	i	i
h	e2	---	---	---	---	---	h	h	h	h	h	h
Y	PRESET CHANNEL	RECEPTION SERVO	lower frame	lower frame	lower frame	lower frame	OSC	---	MONITOR	---	CANCEL	---

Terminal Connection (FL701:ELU0001-042)

Terminal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Electrode	F	F	NP	12G	P(e)	P(d)	P(c)	P(g)	12G	NP	P(f)	11G	P(b)	P(a)	P(x)	NC	NC	11G	NC	

Terminal No.	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
Electrode	NC	10G	NC	NC	9G	NC	NC	NC	8G	NC	NC	NC	NC	7G	NC	NC	NC	NC	6G	NC

Terminal No.		40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58
Electrode		NC	5G	NC	P(m)	P(l)	4G	P(n)	P(k)	3G	P(j)	P(h)	2G	P(i)	P(y)	1G	NC	NP	F	F

Note F: Filament P: Anode G: Grid
 NC: No connection NP: No pin

MEMO

FX-1010TN

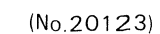


JVC

VICTOR COMPANY OF JAPAN, LIMITED
AUDIO PRODUCTS DIVISION, YAMATO PLANT, 1644, SHIMOTSURUMA, YAMATO-SHI, KANAGAWA-KEN, 242, JAPAN

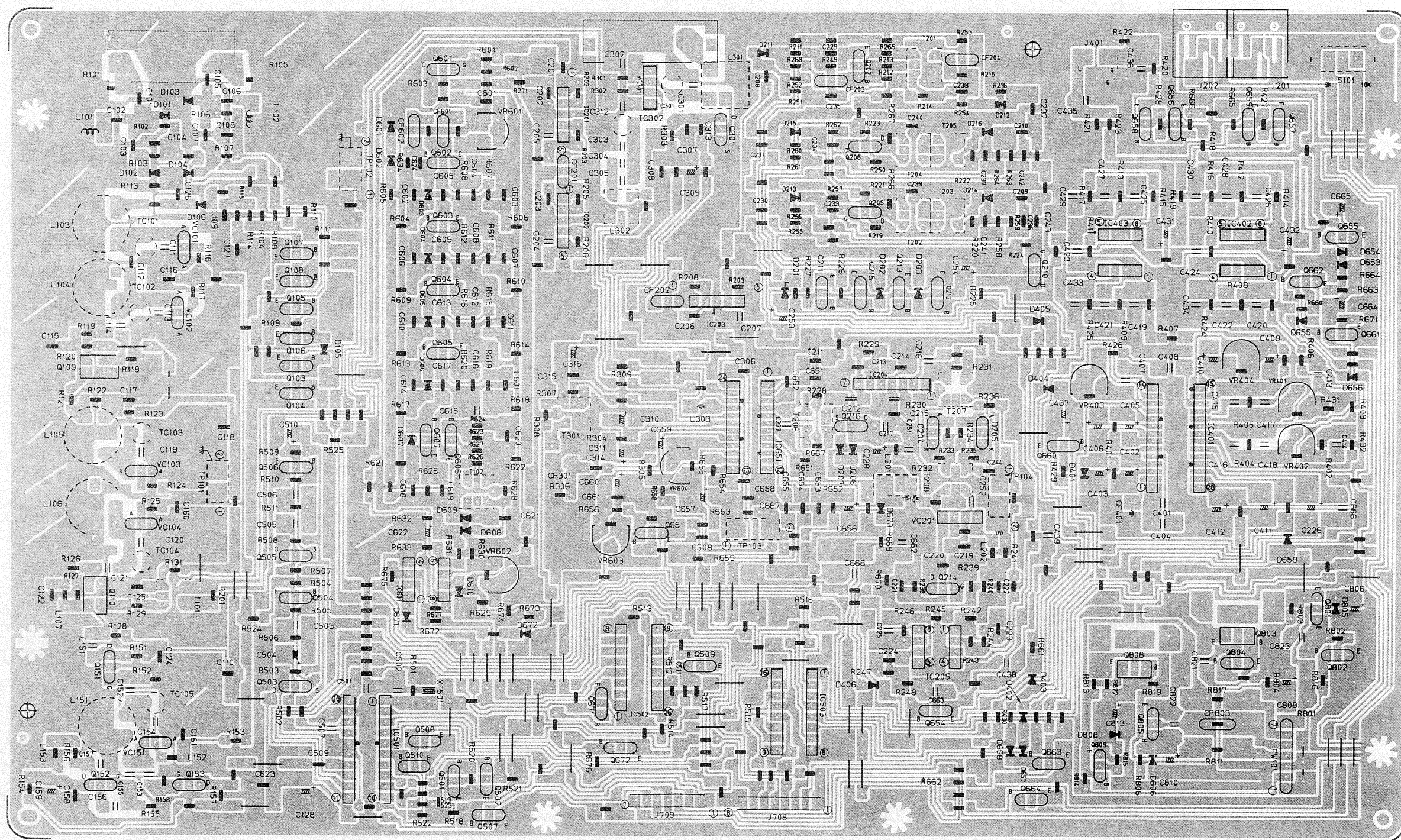
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 Printed in Japan
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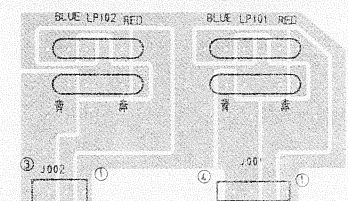
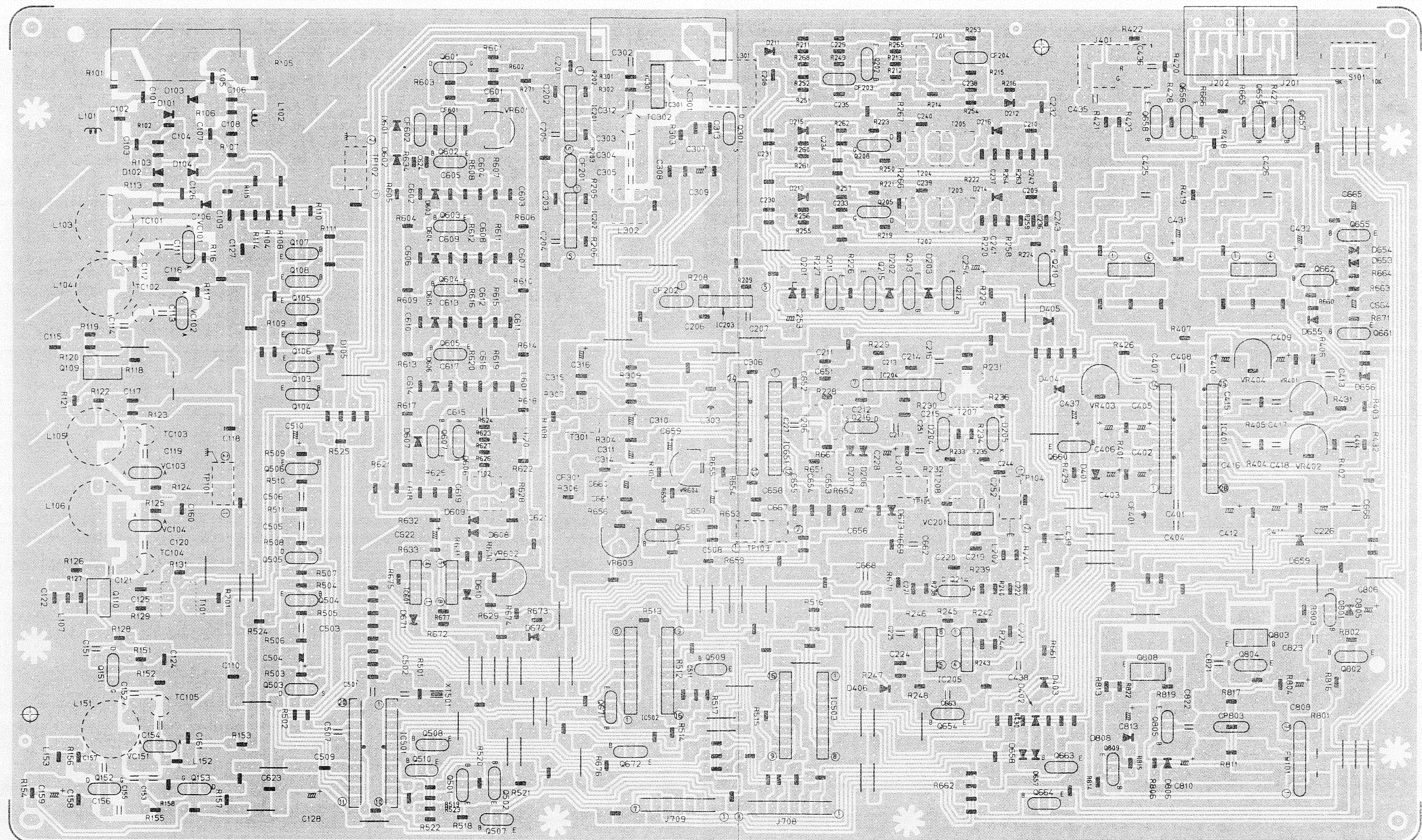


Printed Circuit Boards

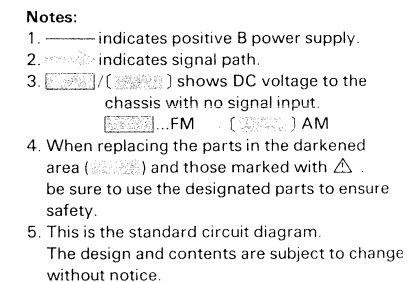
(1) Tuner PC Board (ENA-086): except for West Germany



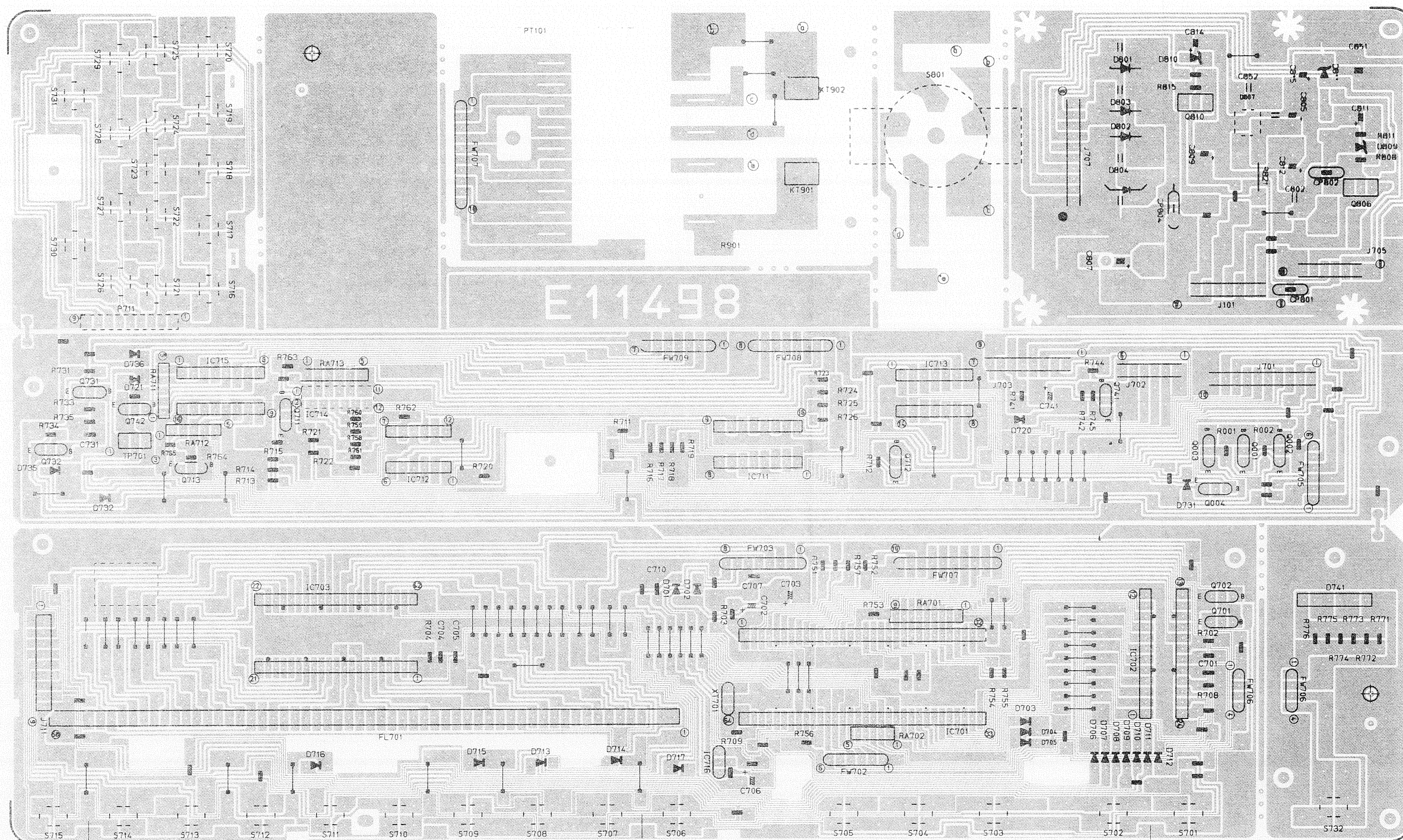
(2) Tuner PC Board (ENA-086): only for West Germany
Filter PC Board (ENA-088): only for West Germany



(3) Logic Section



(3) Logic & Power Supply PC Board (ENB-053)

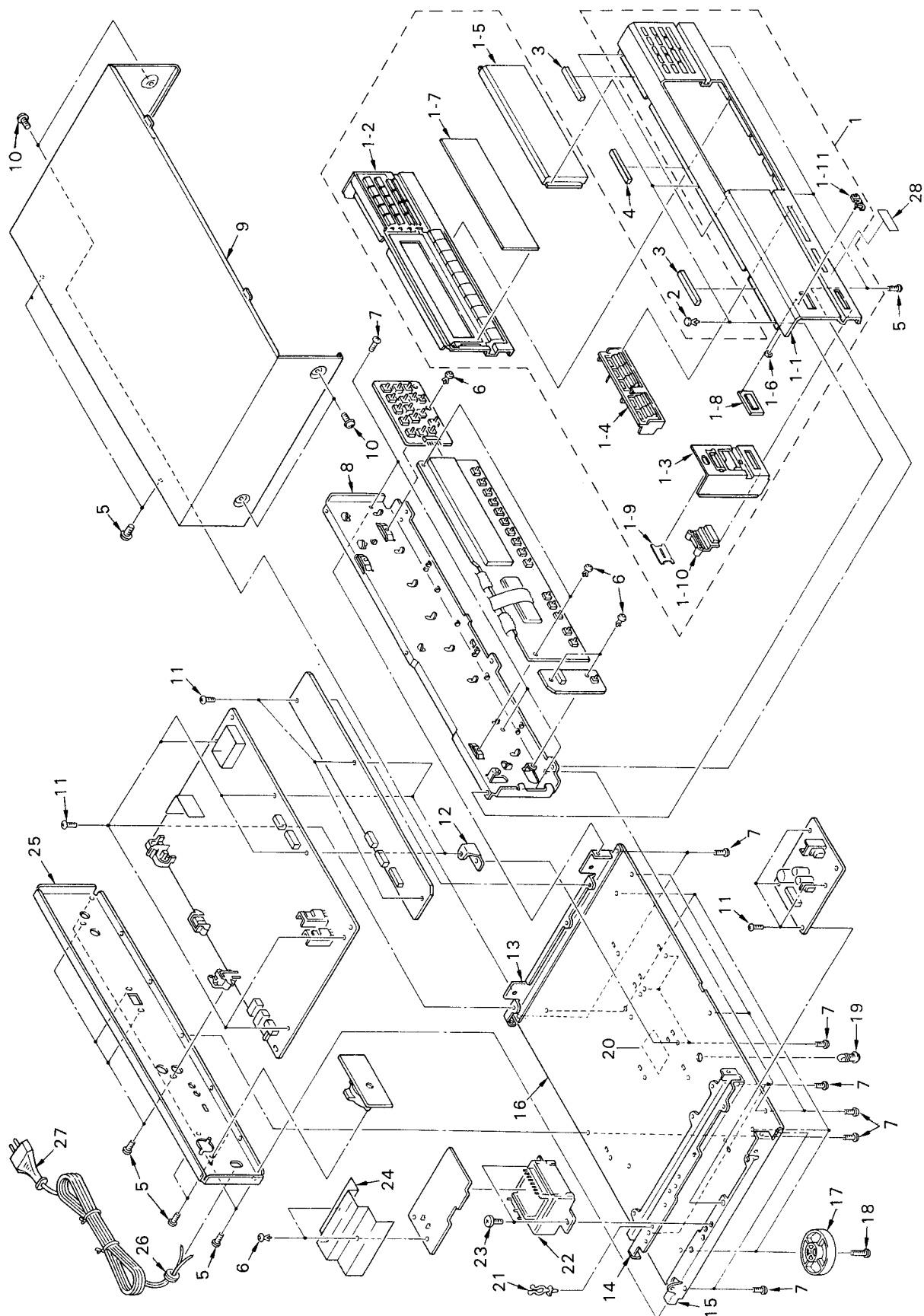


PARTS LIST

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Exploded View and Parts List



⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-FX1010TNE	Front Panel Ass'y	1		
	1-1	E26463-001	Front Panel	1		
	1-2	E26465-001	Push Button Ass'y	1		
	1-3	E306189-001	Push Button Escutcheon	1		
	1-4	E306190-001	Push Button	1		
	1-5	E306194-002	Window Screen	1		
	1-6	E60912-003	Speed Nut	1		
	1-7	E70561-024	FL Screen	1		
	1-8	E74120-001	Screen	1		
	1-9	E75386-001	Screen	1		
	1-10	E75416-001	Push Button Ass'y	1		
	1-11	PQ42376-1-3	JVC Mark	1		
	2	E48729-009	Plastic Rivet	3		
	3	EXO050005N40S02	Spacer	2		
	4	EXO045010H03S	Spacer	1		G
	5	SBSG3008M	Screw	5		
	6	E48729-008	Plastic Rivet	7		
	7	SBSG3006N	Screw	16		
	8	E11499-001	Front Bracket	1		
	9	E25675-004	Matal Cover	1		
	10	E61660-004	Special Screw	4		
	11	SBSG3008CC	Screw	13		
	12	E68587-004	Circuit Board Bracket	3		
	13	E304785-001	Side Bracket	1	Right	
	14	E304786-001	Center Bracket	1		
	15	E304784-001	Side Bracket	1	Left	
	16	E11496-001	Bottom Ass'y	1		
	17	E75088-014	Foot	4		
	18	SBST3008Z	Screw	4	for Foot	
	19	E303216-002	Fastener	1		
	20	E70281-001	Caution Label	1		J, C
		E70115-002	Caution Label	1		A, E, G, U, BS
	21	QHW2052-001	Wire Clamp	1		
	22	ETP1010-34JA	Power Transformer	1	PT101	J, C
		ETP1010-34HA	Power Transformer	1	PT101	U
		ETP1010-34EA	Power Transformer	1	PT101	E, A, G
		ETP1010-34EA8S	Power Transformer	1	PT101	BS
	23	E65389-004	Special Screw	2		
	24	E74284-001	Protect Cover	1		Except U
		E74284-002	Protect Cover	1		U
	25	E25681-005	Rear Panel	1		J, C
		E25681-006	Rear Panel	1		U
		E25681-007	Rear Panel	1		E, A, G, BS
	—	E303260-200	Rating Label	1		E, G
	26	QHS3876-162	Cord Stopper	1		Except BS
		QHS3876-162BS	Cord Stopper	1		BS
	27	QMP1340-200	Power Cord	1		J
		QMP1200-200	Power Cord	1		C
		QMP7600-200	Power Cord	1		U
		QMP3900-200	Power Cord	1		E, G
		QMP2560-244	Power Cord	1		A
		QMP9017-008BS	Power Cord	1		BS
	28	E49267-001	Origin Marking Label	1		BS
	29	SBSG3008CC	Screw	7		Except U
		SBSG3008CC	Screw	9		U

⚠: Safety Parts

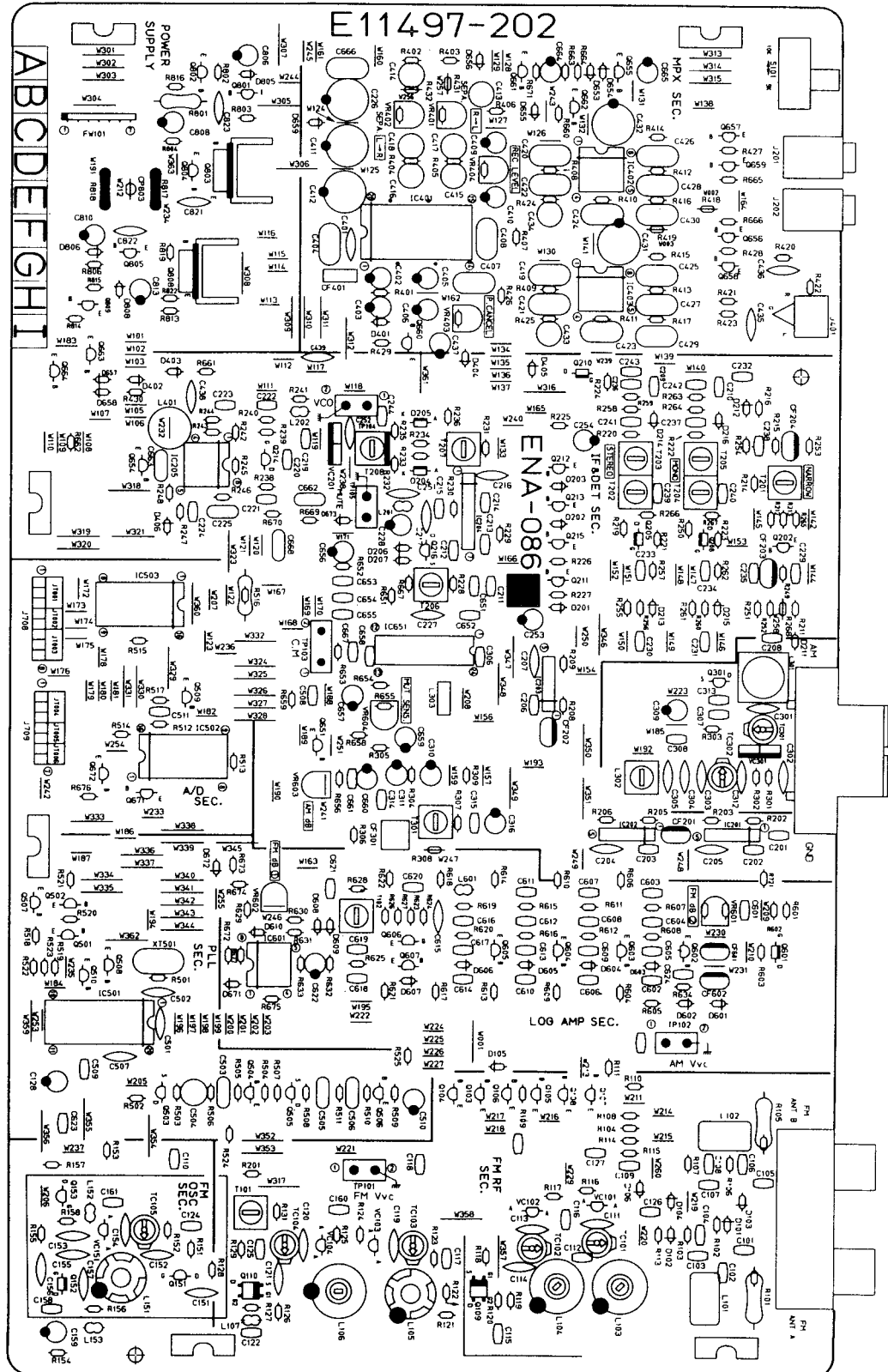
The Marks Designated Areas

J.....the U.S.A.	G.....West Germany
C.....Canada	BS.....the U.K.
A.....Australia	U.....Other Countries
E.....Europe	No mark indicates all areas.

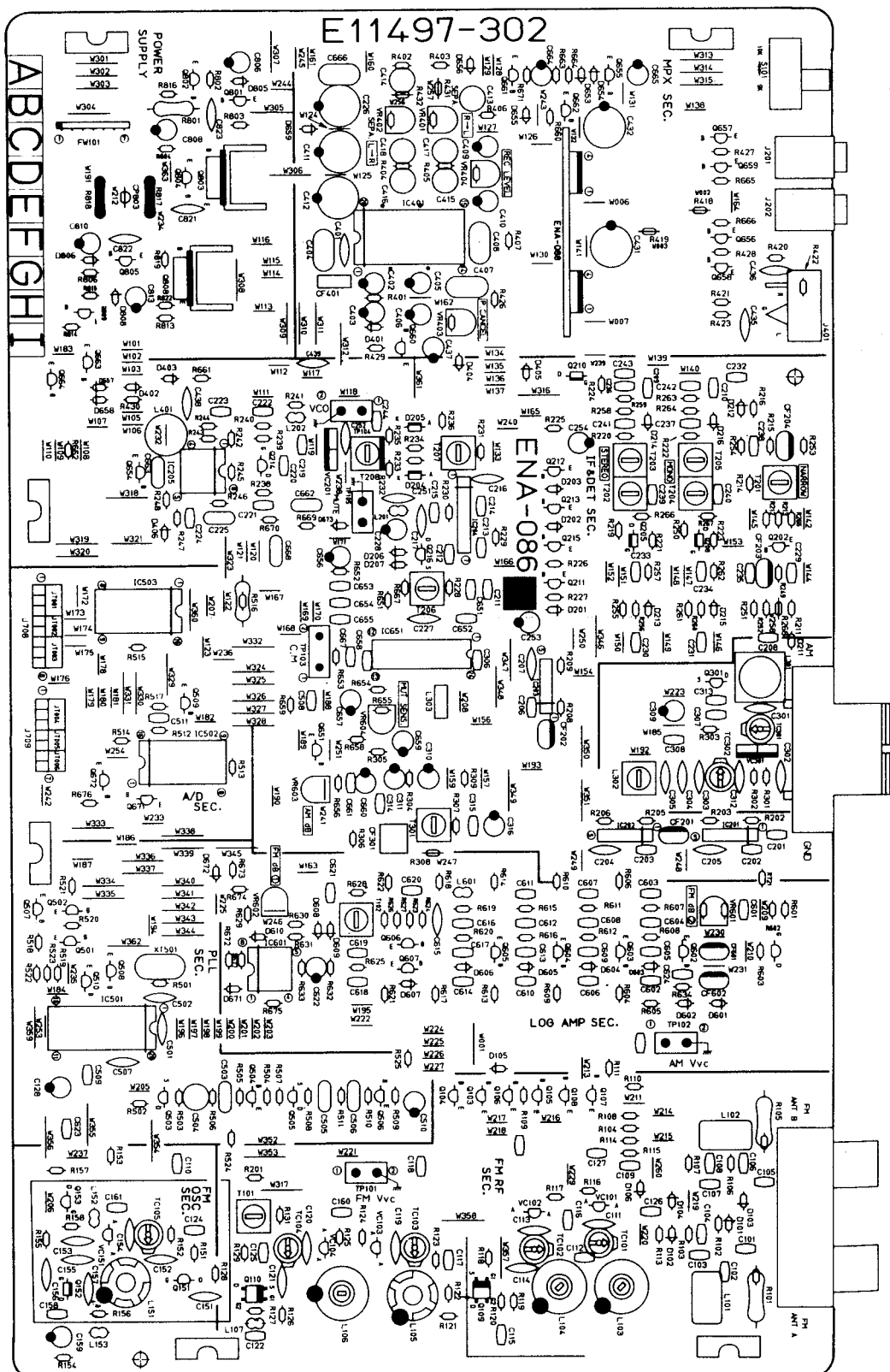
Printed Circuit Board Ass'y and Parts List

■ ENA-086 □ Tuner PC Board Ass'y (Except for West Germany)

Note: ENA-086 □ varies according to the areas employed. See note (1) when placing an order.



■ ENA-086 E Tuner PC Board Ass'y (Only for West Germany)



Note (1)

PC Board Ass'y	Designated Areas
ENA-086 A	the U.S.A., Canada
ENA-086 B	Other Countries
ENA-086 C	Australia
ENA-086 D	Europe, the U.K.
ENA-086 E	West Germany

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
Q103	DTA144ES	SILICON ROHM	
Q104	DTA144ES	SILICON ROHM	
Q105	DTA144ES	SILICON ROHM	
Q106	DTA144ES	SILICON ROHM	
Q107	DTA144ES	SILICON ROHM	
Q108	DTA144ES	SILICON ROHM	
Q109	3SK73(GR)	F.E.T TOSHIBA	
Q110	3SK73(GR)	F.E.T TOSHIBA	
Q151	2SK606(Q,R)	F.E.T MATSUSHITA	
Q152	2SK161(GR)	F.E.T TOSHIBA	
Q153	2SK606(Q,R)	F.E.T MATSUSHITA	
Q202	2SC461(C)	SILICON HITACHI	
Q205	2SK161(GR)	F.E.T TOSHIBA	
Q208	2SK161(GR)	F.E.T TOSHIBA	
Q210	2SK161(GR)	F.E.T TOSHIBA	
Q211	DTA144ES	SILICON ROHM	
Q212	DTA144ES	SILICON ROHM	
Q213	DTA144ES	SILICON ROHM	
Q214	2SK606(Q,R)	F.E.T MATSUSHITA	
Q215	DTA144ES	SILICON ROHM	
Q216	2SK163(M1)	F.E.T NEC	
Q301	2SK301(Q,R)	F.E.T MATSUSHITA	
Q501	2SA1029(C)	SILICON HITACHI	B
Q501	2SA1029(C)	SILICON HITACHI	C
Q501	2SA1029(C)	SILICON HITACHI	D
Q501	2SA1029(C)	SILICON HITACHI	E
Q501	2SB562(C)	SILICON HITACHI	A
Q502	DTA144ES	SILICON ROHM	
Q503	2SK301(Q1)	F.E.T MATSUSHITA	
Q504	2SC458(D)	SILICON HITACHI	
Q505	2SK301(Q1)	F.E.T MATSUSHITA	
Q506	2SC458(D)	SILICON HITACHI	
Q507	DTA144ES	SILICON ROHM	
Q508	DTA144ES	SILICON ROHM	
Q509	DTA144ES	SILICON ROHM	
Q510	DTA144ES	SILICON ROHM	
Q601	2SK161(GR)	F.E.T TOSHIBA	A
Q601	2SK161(GR)	F.E.T TOSHIBA	B
Q601	2SK161(GR)	F.E.T TOSHIBA	C
Q601	2SK161(GR)	F.E.T TOSHIBA	D
Q601	2SK606(Q,R,S)	F.E.T	E
Q602	2SC535(B)	SILICON HITACHI	
Q603	2SC535(B)	SILICON HITACHI	
Q604	2SC535(B)	SILICON HITACHI	
Q605	2SC535(B)	SILICON HITACHI	
Q606	2SC535(B)	SILICON HITACHI	
Q607	2SC535(B)	SILICON HITACHI	
Q654	DTA144ES	SILICON ROHM	
Q655	2SA564A(R,S)	SILICON MATSUSHITA	
Q656	2SD655(E,F)	SILICON HITACHI	
Q657	2SD655(E,F)	SILICON HITACHI	
Q658	2SD655(E,F)	SILICON HITACHI	
Q659	2SD655(E,F)	SILICON HITACHI	
Q660	DTA144ES	SILICON ROHM	
Q661	DTA144ES	SILICON ROHM	
Q662	DTA144ES	SILICON ROHM	
Q663	DTA144ES	SILICON ROHM	
Q664	DTA144ES	SILICON ROHM	B
Q671	DTA114YS	SILICON ROHM	
Q672	DTA114YS	SILICON ROHM	
Q801	2SC2235(Y)	SILICON TOSHIBA	
Q802	2SC458(C,D)	SILICON HITACHI	
Q803	2SD313V(E)	SILICON SANYO	
Q804	2SC458(C,D)	SILICON HITACHI	
Q805	2SC2235(Y)	SILICON TOSHIBA	A
Q805	2SD1302(S,T)	SILICON MATSUSHITA	B
Q805	2SD1302(S,T)	SILICON MATSUSHITA	C
Q805	2SD1302(S,T)	SILICON MATSUSHITA	D
Q805	2SD1302(S,T)	SILICON MATSUSHITA	E
Q808	2SB507V(E)	SILICON SANYO	
Q809	2SA564A(R,S)	SILICON MATSUSHITA	

Δ : SAFETY PARTS

I.C.s

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
IC201	BA401	I.C. ROHM	
IC202	BA401	I.C. ROHM	
IC203	BA401	I.C. ROHM	
IC204	UPC1163HA	I.C. NEC	
IC205	M5219P	I.C. MITSUBISHI	
IC401	LA3450	I.C. SANYO	
IC402	M5219P	I.C. MITSUBISHI	A
IC402	M5219P	I.C. MITSUBISHI	B
IC402	M5219P	I.C. MITSUBISHI	C
IC402	M5219P	I.C. MITSUBISHI	D
IC403	M5219P	I.C. MITSUBISHI	A
IC403	M5219P	I.C. MITSUBISHI	B
IC403	M5219P	I.C. MITSUBISHI	C
IC403	M5219P	I.C. MITSUBISHI	D
IC501	LM7000N	I.C. SANYO	
IC502	MB4052	I.C. FUJITSU	
IC503	TC74HC595AP	I.C. TOSHIBA	
IC601	M5218P	I.C. MITSUBISHI	
IC651	LA1266A	I.C. SANYO	

Diodes

Δ : SAFETY PARTS

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
D101	1SS135	SILICON ROHM	
D102	1SS135	SILICON ROHM	
D103	1SS135	SILICON ROHM	
D104	1SS135	SILICON ROHM	
D105	1SS119	SILICON HITACHI	
D106	1SS135	SILICON ROHM	
D201	1SS119	SILICON HITACHI	
D202	1SS119	SILICON HITACHI	
D203	1SS119	SILICON HITACHI	
D204	MC931	ZENER MITSUBISHI	
D205	MC931	ZENER MITSUBISHI	
D206	1SS119	SILICON HITACHI	
D207	RD8.2JSB3	ZENER NEC	
D211	1SS135	SILICON ROHM	
D212	1SS135	SILICON ROHM	
D213	1SS135	SILICON ROHM	
D214	1SS135	SILICON ROHM	
D215	1SS135	SILICON ROHM	
D216	1SS135	SILICON ROHM	
D401	1SS119	SILICON HITACHI	
D402	1SS119	SILICON HITACHI	
D403	1SS119	SILICON HITACHI	
D404	1SS119	SILICON HITACHI	
D405	1SS119	SILICON HITACHI	
D406	1SS119	SILICON HITACHI	
D601	1SS119	SILICON HITACHI	
D602	1SS119	SILICON HITACHI	
D603	1SS119	SILICON HITACHI	
D604	1SS119	SILICON HITACHI	
D605	1SS119	SILICON HITACHI	
D606	1SS119	SILICON HITACHI	
D607	1SS119	SILICON HITACHI	
D608	1SS119	SILICON HITACHI	
D609	1SS119	SILICON HITACHI	
D610	1SS119	SILICON HITACHI	
D653	1SS119	SILICON HITACHI	
D654	1SS119	SILICON HITACHI	
D655	1SS119	SILICON HITACHI	
D656	1SS119	SILICON HITACHI	
D657	1SS119	SILICON HITACHI	
D658	1SS119	SILICON HITACHI	
D659	1SS119	SILICON HITACHI	
D671	1SS119	SILICON HITACHI	
D672	1SS119	SILICON HITACHI	
D673	1SS119	SILICON HITACHI	
D805	MTZ30JC	ZENER ROHM	
D806	MTZ5.6JC	ZENER ROHM	
D808	MTZ13JC	ZENER ROHM	
VC101	KV1320	VARICAP TOUKOU	
VC102	KV1320	VARICAP TOUKOU	
VC103	KV1320	VARICAP TOUKOU	
VC104	KV1320	VARICAP TOUKOU	
VC151	KV1320	VARICAP TOUKOU	
VC201	KV1226	VARICAP TOUKOU	
VC301	KV1226	VARICAP TOUKOU	

Δ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C101	QCSB1HJ-330	33PF	50V	CERAMIC	
	C102	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C103	QCSB1HJ-180	18PF	50V	CERAMIC	
	C104	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C105	QCSB1HJ-330	33PF	50V	CERAMIC	
	C106	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C107	QCSB1HJ-180	18PF	50V	CERAMIC	
	C108	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C109	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C110	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C111	QCT26TH-5R0	5PF	50V	CERAMIC	
	C112	QCT30CH-1R0	1PF	50V	CERAMIC	
	C113	QCT26TH-5R0	5PF	50V	CERAMIC	
	C114	QCS21HJ-220	22PF	50V	CERAMIC	A
	C114	QCS21HJ-220	22PF	50V	CERAMIC	B
	C114	QCS21HJ-220	22PF	50V	CERAMIC	C
	C114	QCS21HJ-220	22PF	50V	CERAMIC	D
	C114	QCS21HJ-7R0	7PF	50V	CERAMIC	E
	C115	QCVB1HK-102	1000PF	50V	CERAMIC	
	C116	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C117	QCVB1HK-102	1000PF	50V	CERAMIC	
	C118	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C120	QCT26TH-5R0	5PF	50V	CERAMIC	
	C121	QCS21HJ-4R0	4PF	50V	CERAMIC	
	C122	QCB1HK-151	150PF	50V	CERAMIC	
	C124	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C125	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C126	QCSB1HJ-470	47PF	50V	CERAMIC	
	C127	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C128	QETB1CM-227	220MF	16V	ELECTRO	
	C151	QCS21HJ-100	10PF	50V	CERAMIC	
	C152	QCT26CH-1R0	1PF	50V	CERAMIC	
	C153	QCT26CH-2R0	2PF	50V	CERAMIC	
	C154	QCT26TH-5R0	5PF	50V	CERAMIC	
	C155	QCT26CH-220	22PF	50V	CERAMIC	
	C156	QCT26TH-100	10PF	50V	CERAMIC	
	C157	QCT26TH-150	15PF	50V	CERAMIC	
	C158	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C159	QETB1CM-107	100MF	16V	ELECTRO	
	C160	QCVB1HK-102	1000PF	50V	CERAMIC	
	C161	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C201	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C202	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C203	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C204	QCC21EM-473	0.047MF	25V	CERAMIC	
	C205	QCC21EM-473	0.047MF	25V	CERAMIC	
	C206	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C207	QCC21EM-473	0.047MF	25V	CERAMIC	
	C208	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C209	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C210	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C211	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C212	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C213	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C214	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C215	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C216	QCC21EM-473	0.047MF	25V	CERAMIC	
	C217	QCC21EM-473	0.047MF	25V	CERAMIC	
	C219	QCSB1HJ-270	27PF	50V	CERAMIC	
	C220	QCSB1HJ-100	10PF	50V	CERAMIC	
	C221	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C222	QCB1HK-101	100PF	50V	CERAMIC	
	C223	QCSB1HJ-220	22PF	50V	CERAMIC	
	C224	QCSB1HJ-220	22PF	50V	CERAMIC	
	C225	QFN81HJ-332	3300PF	50V	MYLAR	
	C226	EEZ41HM-226	22MF	50V	ELECTRO	
	C227	QCC21EM-473	0.047MF	25V	CERAMIC	
	C228	QETB1CM-227	220MF	16V	ELECTRO	
	C229	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C230	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C231	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C232	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C233	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C234	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C235	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C236	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C237	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C238	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C239	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C240	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C241	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C242	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C243	QCVB1CM-103	0.01MF	16V	CERAMIC	
	C244	QCB1HK-101	100PF	50V	CERAMIC	
	C251	QCC21EM-473	0.047MF	25V	CERAMIC	

△ : SAFETY PARTS

Capacitors

△	ITEM	PART NUMBER	DESCRIPTION			AREA
	C252	QCC21EM-223	0.022MF	25V	CERAMIC	
	C253	QETB1HM-105	1MF	50V	ELECTRO	
	C254	QETB1HM-105	1MF	50V	ELECTRO	
	C260	QCS21HJ-100	10PF	50V	CERAMIC	
	C302	QCC21EM-473	0.047MF	25V	CERAMIC	
	C303	QCT26CH-7R0	7PF	50V	CERAMIC	
	C304	QCT26CH-271	270PF	50V	CERAMIC	
	C305	QCT26CH-221	220PF	50V	CERAMIC	
	C306	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C307	QCB1HK-561	560PF	50V	CERAMIC	
	C308	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C309	QETB1EM-106	10MF	25V	ELECTRO	
	C310	QETB1HM-475	4.7MF	50V	ELECTRO	
	C311	QETB1HM-225	2.2MF	50V	ELECTRO	
	C312	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C313	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C314	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C315	QCHB1EZ-223	0.022MF	25V	CERAMIC	
	C316	QETB1EM-226	22MF	25V	ELECTRO	
	C402	QETB1HM-474	0.47MF	50V	ELECTRO	
	C403	QETB1HM-225	2.2MF	50V	ELECTRO	
	C404	QFN81HK-473	0.047MF	50V	MYLAR	
	C405	QETB1HM-105	1MF	50V	ELECTRO	
	C406	QETB1HM-105	1MF	50V	ELECTRO	
	C407	QFN81HK-103	0.01MF	50V	MYLAR	
	C408	QFN81HK-103	0.01MF	50V	MYLAR	
	C409	QETB1HM-474	0.47MF	50V	ELECTRO	
	C410	QETB1HM-474	0.47MF	50V	ELECTRO	
	C411	EEZ41EM-107	100MF	25V	ELECTRO	
	C412	EEZ41EM-107	100MF	25V	ELECTRO	
	C413	QFP81HJ-151	150PF	50V	POLY	
	C414	QFP81HJ-101	100PF	50V	POLY	
	C415	QFP81HJ-151	150PF	50V	POLY	
	C415	QFP81HJ-271	270PF	50V	POLY	A
	C415	QFP81HJ-271	270PF	50V	POLY	B
	C416	QFP81HJ-151	150PF	50V	POLY	E
	C416	QFP81HJ-271	270PF	50V	POLY	A
	C416	QFP81HJ-271	270PF	50V	POLY	B
	C417	QFP81HG-101	100PF	50V	POLY	E
	C417	QFP81HG-331	330PF	50V	POLY	C
	C417	QFP81HG-331	330PF	50V	POLY	D
	C417	QFP81HG-471	470PF	50V	POLY	A
	C417	QFP81HG-471	470PF	50V	POLY	B
	C418	QFP81HG-101	100PF	50V	POLY	E
	C418	QFP81HG-331	330PF	50V	POLY	C
	C418	QFP81HG-331	330PF	50V	POLY	D
	C418	QFP81HG-471	470PF	50V	POLY	A
	C418	QFP81HG-471	470PF	50V	POLY	B
	C419	QFN81HK-332	3300PF	50V	MYLAR	A
	C419	QFN81HK-332	3300PF	50V	MYLAR	B
	C419	QFN81HK-332	3300PF	50V	MYLAR	C
	C419	QFN81HK-332	3300PF	50V	MYLAR	D
	C420	QFN81HK-332	3300PF	50V	MYLAR	A
	C420	QFN81HK-332	3300PF	50V	MYLAR	B
	C420	QFN81HK-332	3300PF	50V	MYLAR	C
	C420	QFN81HK-332	3300PF	50V	MYLAR	D
	C421	QFN81HK-153	0.015MF	50V	MYLAR	A
	C421	QFN81HK-153	0.015MF	50V	MYLAR	B
	C421	QFN81HK-153	0.015MF	50V	MYLAR	C
	C421	QFN81HK-153	0.015MF	50V	MYLAR	D
	C422	QFN81HK-153	0.015MF	50V	MYLAR	A
	C422	QFN81HK-153	0.015MF	50V	MYLAR	B
	C422	QFN81HK-153	0.015MF	50V	MYLAR	C
	C422	QFN81HK-153	0.015MF	50V	MYLAR	D
	C423	QFN81HK-102	1000PF	50V	MYLAR	A
	C423	QFN81HK-102	1000PF	50V	MYLAR	B
	C423	QFN81HK-102	1000PF	50V	MYLAR	C
	C423	QFN81HK-102	1000PF	50V	MYLAR	D
	C424	QFN81HK-102	1000PF	50V	MYLAR	A
	C424	QFN81HK-102	1000PF	50V	MYLAR	B
	C424	QFN81HK-102	1000PF	50V	MYLAR	C
	C424	QFN81HK-102	1000PF	50V	MYLAR	D
	C425	QFN81HK-222	2200PF	50V	MYLAR	A
	C425	QFN81HK-222	2200PF	50V	MYLAR	B
	C425	QFN81HK-222	2200PF	50V	MYLAR	C
	C425	QFN81HK-222	2200PF	50V	MYLAR	D
	C426	QFN81HK-222	2200PF	50V	MYLAR	A
	C426	QFN81HK-222	2200PF	50V	MYLAR	B
	C426	QFN81HK-222	2200PF	50V	MYLAR	C
	C426	QFN81HK-222	2200PF	50V	MYLAR	D
	C427	QFN81HK-102	1000PF	50V	MYLAR	A
	C427	QFN81HK-102	1000PF	50V	MYLAR	B
	C427	QFN81HK-102	1000PF	50V	MYLAR	C
	C427	QFN81HK-102	1000PF	50V	MYLAR	D
	C428	QFN81HK-102	1000PF	50V	MYLAR	A

△ : SAFETY PARTS

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
C428	QFN81HK-102	1000PF 50V MYLAR	B
C428	QFN81HK-102	1000PF 50V MYLAR	C
C428	QFN81HK-102	1000PF 50V MYLAR	D
C429	QFN81HK-102	1000PF 50V MYLAR	A
C429	QFN81HK-102	1000PF 50V MYLAR	B
C429	QFN81HK-102	1000PF 50V MYLAR	C
C429	QFN81HK-102	1000PF 50V MYLAR	D
C430	QFN81HK-102	1000PF 50V MYLAR	A
C430	QFN81HK-102	1000PF 50V MYLAR	B
C430	QFN81HK-102	1000PF 50V MYLAR	C
C430	QFN81HK-102	1000PF 50V MYLAR	D
C431	EEZ5001-475	4.7MF 100V ELECTRO	
C432	EEZ5001-475	4.7MF 100V ELECTRO	
C433	QFP81HJ-181	180PF 50V POLY	A
C433	QFP81HJ-181	180PF 50V POLY	B
C433	QFP81HJ-181	180PF 50V POLY	C
C433	QFP81HJ-181	180PF 50V POLY	D
C434	QFP81HJ-181	180PF 50V POLY	A
C434	QFP81HJ-181	180PF 50V POLY	B
C434	QFP81HJ-181	180PF 50V POLY	C
C434	QFP81HJ-181	180PF 50V POLY	D
C435	QCS21HJ-331	330PF 50V CERAMIC	E
C436	QCS21HJ-331	330PF 50V CERAMIC	E
C437	QETB1EM-106	10MF 25V ELECTRO	
C438	QCS21HJ-181	180PF 50V CERAMIC	E
C439	QCS21HJ-181	180PF 50V CERAMIC	E
C501	QCT26CH-270	27PF 50V CERAMIC	
C502	QCT26CH-270	27PF 50V CERAMIC	
C503	QFN81HK-102	1000PF 50V MYLAR	
C504	QEN51HM-225	2.2MF 50V NON POLE	
C505	QFN81HK-104	0.1MF 50V MYLAR	
C506	QFN81HK-472	4700PF 50V MYLAR	
C507	QCC21EM-473	0.047MF 25V CERAMIC	
C508	QCVB1CM-103	0.01MF 16V CERAMIC	
C509	QCVB1CM-103	0.01MF 16V CERAMIC	
C510	QETB1VM-107	100MF 35V ELECTRO	
C511	QCSB1HJ-150	15PF 50V CERAMIC	
C601	QCVB1CM-103	0.01MF 16V CERAMIC	
C602	QCVB1CM-103	0.01MF 16V CERAMIC	
C603	QCHB1EZ-223	0.022MF 25V CERAMIC	
C604	QCGB1HK-102	1000PF 50V CERAMIC	
C605	QCVB1CM-103	0.01MF 16V CERAMIC	
C606	QCVB1CM-103	0.01MF 16V CERAMIC	
C607	QCHB1EZ-223	0.022MF 25V CERAMIC	
C608	QCGB1HK-102	1000PF 50V CERAMIC	
C609	QCVB1CM-103	0.01MF 16V CERAMIC	
C610	QCVB1CM-103	0.01MF 16V CERAMIC	
C611	QCHB1EZ-223	0.022MF 25V CERAMIC	
C612	QCGB1HK-102	1000PF 50V CERAMIC	
C613	QCVB1CM-103	0.01MF 16V CERAMIC	
C614	QCVB1CM-103	0.01MF 16V CERAMIC	
C615	QCC21EM-473	0.047MF 25V CERAMIC	
C616	QCGB1HK-102	1000PF 50V CERAMIC	
C617	QCVB1CM-103	0.01MF 16V CERAMIC	
C618	QCVB1CM-103	0.01MF 16V CERAMIC	
C619	QCGB1HK-102	1000PF 50V CERAMIC	
C620	QCVB1CM-103	0.01MF 16V CERAMIC	
C621	QCVB1CM-103	0.01MF 16V CERAMIC	
C622	QETB1HM-105	1MF 50V ELECTRO	
C623	QCHB1EZ-223	0.022MF 25V CERAMIC	
C624	QCVB1CM-103	0.01MF 16V CERAMIC	
C651	QCHB1EZ-223	0.022MF 25V CERAMIC	
C652	QCHB1EZ-223	0.022MF 25V CERAMIC	
C653	QCHB1EZ-223	0.022MF 25V CERAMIC	
C654	QCB1HK-101	100PF 50V CERAMIC	
C655	QCB1HK-101	100PF 50V CERAMIC	
C656	QETB1HM-474	0.47MF 50V ELECTRO	
C657	QETB1EM-106	10MF 25V ELECTRO	
C658	QCHB1EZ-223	0.022MF 25V CERAMIC	
C659	QETB1HM-475	4.7MF 50V ELECTRO	
C660	QETB1HM-225	2.2MF 50V ELECTRO	
C661	QCHB1EZ-223	0.022MF 25V CERAMIC	
C663	QFN81HJ-152	1500PF 50V MYLAR	
C664	QETB1HM-105	1MF 50V ELECTRO	
C665	QETB1HM-474	0.47MF 50V ELECTRO	
C666	QFN81HK-473	0.047MF 50V MYLAR	
C667	QCHB1EZ-223	0.022MF 25V CERAMIC	
C668	QFN81HK-104	0.1MF 50V MYLAR	
C806	QETB1HM-226	22MF 25V ELECTRO	
C808	QETB1EM-226	22MF 25V ELECTRO	
C810	QETB1EM-226	22MF 25V ELECTRO	
C813	QETB1EM-226	22MF 25V ELECTRO	
C821	QFN81HJ-103	0.01MF 50V MYLAR	
C822	QFN81HJ-103	0.01MF 50V MYLAR	
C823	QCF21HP-103	0.01MF 50V CERAMIC	

△ : SAFETY PARTS

Capacitors

ITEM	PART NUMBER	DESCRIPTION	AREA
TC101	ENZ1003-003	TRIMMER	
TC102	ENZ1003-003	TRIMMER	
TC103	ENZ1003-003	TRIMMER	
TC104	ENZ1003-003	TRIMMER	
TC105	ENZ1003-003	TRIMMER	
TC301	ENZ1003-002	TRIMMER	
TC302	ENZ1003-002	TRIMMER	

△ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R101	QRC128K-105EM	1M 1/2W COMPOSI	
R102	QRD167J-152	1.5K 1/6W CARBON	
R103	QRD167J-152	1.5K 1/6W CARBON	
R104	QRD167J-472	4.7K 1/6W CARBON	
R105	QRC128K-105EM	1M 1/2W COMPOSI	
R106	QRD167J-152	1.5K 1/6W CARBON	
R107	QRD167J-152	1.5K 1/6W CARBON	
R108	QRD167J-472	4.7K 1/6W CARBON	
R109	QRD167J-103	10K 1/6W CARBON	
R110	QRD167J-152	1.5K 1/6W CARBON	
R111	QRD167J-152	1.5K 1/6W CARBON	
R113	QRD167J-152	1.5K 1/6W CARBON	
R114	QRD167J-473	47K 1/6W CARBON	
R115	QRD167J-473	47K 1/6W CARBON	
R116	QRD167J-473	47K 1/6W CARBON	
R117	QRD167J-473	47K 1/6W CARBON	
R118	QRD167J-104	100K 1/6W CARBON	
R119	QRD167J-123	12K 1/6W CARBON	E
R119	QRD167J-473	47K 1/6W CARBON	A
R119	QRD167J-473	47K 1/6W CARBON	B
R119	QRD167J-473	47K 1/6W CARBON	C
R119	QRD167J-473	47K 1/6W CARBON	D
R120	QRD167J-104	100K 1/6W CARBON	
R121	QRD167J-100	10 1/6W CARBON	
R122	QRD167J-103	10K 1/6W CARBON	E
R123	QRD167J-221	220 1/6W CARBON	
R124	QRD167J-473	47K 1/6W CARBON	
R125	QRD167J-473	47K 1/6W CARBON	
R126	QRD167J-104	100K 1/6W CARBON	
R127	QRD167J-332	3.3K 1/6W CARBON	E
R127	QRD167J-562	5.6K 1/6W CARBON	A
R127	QRD167J-562	5.6K 1/6W CARBON	B
R127	QRD167J-562	5.6K 1/6W CARBON	C
R127	QRD167J-562	5.6K 1/6W CARBON	D
R128	QRD167J-104	100K 1/6W CARBON	
R129	QRD167J-100	10 1/6W CARBON	
R131	QRD167J-221	220 1/6W CARBON	
R151	QRD167J-331	330 1/6W CARBON	
R152	QRD167J-104	100K 1/6W CARBON	
R153	QRD167J-562	5.6K 1/6W CARBON	
R154	QRD167J-221	220 1/6W CARBON	
R155	QRD167J-223	22K 1/6W CARBON	
R156	QRD167J-330	33 1/6W CARBON	
R157	QRD167J-331	330 1/6W CARBON	
R158	QRD167J-104	100K 1/6W CARBON	
R201	QRD167J-102	1K 1/6W CARBON	
R202	QRD167J-102	1K 1/6W CARBON	E
R202	QRD167J-331	330 1/6W CARBON	A
R202	QRD167J-331	330 1/6W CARBON	B
R202	QRD167J-331	330 1/6W CARBON	C
R202	QRD167J-331	330 1/6W CARBON	D
R203	QRD167J-331	330 1/6W CARBON	
R205	QRD167J-331	330 1/6W CARBON	
R206	QRD167J-331	330 1/6W CARBON	
R208	QRD167J-331	330 1/6W CARBON	
R209	QRD167J-331	330 1/6W CARBON	
R211	QRD167J-103	10K 1/6W CARBON	A
R211	QRD167J-103	10K 1/6W CARBON	B
R211	QRD167J-103	10K 1/6W CARBON	C
R211	QRD167J-103	10K 1/6W CARBON	D
R211	QRD167J-331	330 1/6W CARBON	E
R212	QRD167J-272	2.7K 1/6W CARBON	
R213	QRD167J-391	390 1/6W CARBON	
R214	QRD167J-102	1K 1/6W CARBON	
R215	QRD167J-102	1K 1/6W CARBON	
R216	QRD167J-331	330 1/6W CARBON	
R219	QRD167J-104	100K 1/6W CARBON	A
R219	QRD167J-104	100K 1/6W CARBON	B
R219	QRD167J-104	100K 1/6W CARBON	C
R219	QRD167J-104	100K 1/6W CARBON	D
R219	QRD167J-331	330 1/6W CARBON	E
R220	QRD167J-102	1K 1/6W CARBON	
R221	QRD167J-101	100 1/6W CARBON	

△ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION				AREA
R222	QRD167J-102	1K	1/6W	CARBON		
R223	QRD167J-101	100	1/6W	CARBON		
R224	QRD167J-104	100K	1/6W	CARBON		
R225	QRD167J-331	330	1/6W	CARBON		
R226	QRD167J-472	4.7K	1/6W	CARBON		
R227	QRD167J-472	4.7K	1/6W	CARBON		
R228	QRD167J-102	1K	1/6W	CARBON		
R229	QRD167J-222	2.2K	1/6W	CARBON		
R230	QRD167J-331	330	1/6W	CARBON		
R231	QRD167J-102	1K	1/6W	CARBON		
R232	QRD167J-102	1K	1/6W	CARBON		
R233	QRD167J-102	1K	1/6W	CARBON		
R234	QRD167J-102	1K	1/6W	CARBON		
R235	QRD167J-102	1K	1/6W	CARBON		
R236	QRD167J-102	1K	1/6W	CARBON		
R238	QRD167J-152	1.5K	1/6W	CARBON		
R239	QRD167J-104	100K	1/6W	CARBON		
R240	QRD167J-103	10K	1/6W	CARBON		
R241	QRD167J-102	1K	1/6W	CARBON		
R242	QRD167J-681	680	1/6W	CARBON		
R243	QRD167J-224	220K	1/6W	CARBON		
R244	QRD167J-102	1K	1/6W	CARBON		
R245	QRD167J-152	1.5K	1/6W	CARBON		
R246	QRD167J-102	1K	1/6W	CARBON		
R247	QRD167J-102	1K	1/6W	CARBON		
R248	QRD167J-472	4.7K	1/6W	CARBON		
R249	QRD167J-681	680	1/6W	CARBON		
R250	QRD167J-104	100K	1/6W	CARBON		
R250	QRD167J-104	100K	1/6W	CARBON		A
R250	QRD167J-104	100K	1/6W	CARBON		B
R250	QRD167J-104	100K	1/6W	CARBON		C
R250	QRD167J-104	100K	1/6W	CARBON		D
R250	QRD167J-331	330	1/6W	CARBON		E
R251	QRD167J-103	10K	1/6W	CARBON		
R252	QRD167J-224	220K	1/6W	CARBON		
R253	QRD167J-224	220K	1/6W	CARBON		
R254	QRD167J-103	10K	1/6W	CARBON		
R255	QRD167J-103	10K	1/6W	CARBON		
R256	QRD167J-224	220K	1/6W	CARBON		
R257	QRD167J-103	10K	1/6W	CARBON		
R258	QRD167J-224	220K	1/6W	CARBON		
R259	QRD167J-103	10K	1/6W	CARBON		
R260	QRD167J-224	220K	1/6W	CARBON		
R261	QRD167J-103	10K	1/6W	CARBON		
R262	QRD167J-103	10K	1/6W	CARBON		
R263	QRD167J-224	220K	1/6W	CARBON		
R264	QRD167J-103	10K	1/6W	CARBON		
R265	QRD167J-471	470	1/6W	CARBON		
R266	QRD167J-472	4.7K	1/6W	CARBON		
R267	QRD167J-472	4.7K	1/6W	CARBON		
R268	QRD167J-101	100	1/6W	CARBON		E
R301	QRD167J-223	22K	1/6W	CARBON		
R302	QRD167J-473	47K	1/6W	CARBON		
R303	QRD167J-471	470	1/6W	CARBON		
R304	QRD167J-103	10K	1/6W	CARBON		
R305	QRD167J-103	10K	1/6W	CARBON		
R306	QRD167J-222	2.2K	1/6W	CARBON		
R309	QRD167J-470	47	1/6W	CARBON		
R401	QRD167J-332	3.3K	1/6W	CARBON		
R402	QRD167J-104	100K	1/6W	CARBON		
R403	QRD167J-104	100K	1/6W	CARBON		
R404	QRD167J-104	100K	1/6W	CARBON		A
R404	QRD167J-104	100K	1/6W	CARBON		B
R404	QRD167J-154	150K	1/6W	CARBON		C
R404	QRD167J-154	150K	1/6W	CARBON		D
R404	QRD167J-204	200K	1/6W	CARBON		E
R405	QRD167J-104	100K	1/6W	CARBON		A
R405	QRD167J-104	100K	1/6W	CARBON		B
R405	QRD167J-154	150K	1/6W	CARBON		C
R405	QRD167J-154	150K	1/6W	CARBON		D
R405	QRD167J-204	200K	1/6W	CARBON		E
R406	QRD167J-332	3.3K	1/6W	CARBON		
R407	QRD167J-332	3.3K	1/6W	CARBON		
R408	QRD167J-332	3.3K	1/6W	CARBON		A
R408	QRD167J-332	3.3K	1/6W	CARBON		B
R408	QRD167J-332	3.3K	1/6W	CARBON		C
R408	QRD167J-332	3.3K	1/6W	CARBON		D
R409	QRD167J-332	3.3K	1/6W	CARBON		A
R409	QRD167J-332	3.3K	1/6W	CARBON		B
R409	QRD167J-332	3.3K	1/6W	CARBON		C
R409	QRD167J-332	3.3K	1/6W	CARBON		D
R410	QRD167J-392	3.9K	1/6W	CARBON		A
R410	QRD167J-392	3.9K	1/6W	CARBON		B
R410	QRD167J-392	3.9K	1/6W	CARBON		C
R410	QRD167J-392	3.9K	1/6W	CARBON		D
R411	QRD167J-392	3.9K	1/6W	CARBON		A

Δ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION				AREA
R411	QRD167J-392	3.9K	1/6W	CARBON		B
R411	QRD167J-392	3.9K	1/6W	CARBON		C
R411	QRD167J-392	3.9K	1/6W	CARBON		D
R412	QRD167J-392	3.9K	1/6W	CARBON		A
R412	QRD167J-392	3.9K	1/6W	CARBON		B
R412	QRD167J-392	3.9K	1/6W	CARBON		C
R412	QRD167J-392	3.9K	1/6W	CARBON		D
R413	QRD167J-392	3.9K	1/6W	CARBON		A
R413	QRD167J-392	3.9K	1/6W	CARBON		B
R413	QRD167J-392	3.9K	1/6W	CARBON		C
R413	QRD167J-392	3.9K	1/6W	CARBON		D
R414	QRD167J-182	1.8K	1/6W	CARBON		A
R414	QRD167J-182	1.8K	1/6W	CARBON		B
R414	QRD167J-182	1.8K	1/6W	CARBON		C
R414	QRD167J-182	1.8K	1/6W	CARBON		D
R415	QRD167J-182	1.8K	1/6W	CARBON		A
R415	QRD167J-182	1.8K	1/6W	CARBON		B
R415	QRD167J-182	1.8K	1/6W	CARBON		C
R415	QRD167J-182	1.8K	1/6W	CARBON		D
R416	QRD167J-101	100	1/6W	CARBON		A
R416	QRD167J-101	100	1/6W	CARBON		B
R416	QRD167J-101	100	1/6W	CARBON		C
R416	QRD167J-101	100	1/6W	CARBON		D
R417	QRD167J-101	100	1/6W	CARBON		A
R417	QRD167J-101	100	1/6W	CARBON		B
R417	QRD167J-101	100	1/6W	CARBON		C
R417	QRD167J-101	100	1/6W	CARBON		D
R418	QRD167J-152	1.5K	1/6W	CARBON		A
R418	QRD167J-152	1.5K	1/6W	CARBON		B
R418	QRD167J-152	1.5K	1/6W	CARBON		C
R418	QRD167J-152	1.5K	1/6W	CARBON		D
R419	QRD167J-152	1.5K	1/6W	CARBON		A
R419	QRD167J-152	1.5K	1/6W	CARBON		B
R419	QRD167J-152	1.5K	1/6W	CARBON		C
R419	QRD167J-152	1.5K	1/6W	CARBON		D
R420	QRD167J-101	100	1/6W	CARBON		
R421	QRD167J-101	100	1/6W	CARBON		
R422	QRD167J-682	6.8K	1/6W	CARBON		
R423	QRD167J-682	6.8K	1/6W	CARBON		
R424	QRD167J-332	3.3K	1/6W	CARBON		A
R424	QRD167J-332	3.3K	1/6W	CARBON		B
R424	QRD167J-332	3.3K	1/6W	CARBON		C
R424	QRD167J-332	3.3K	1/6W	CARBON		D
R425	QRD167J-332	3.3K	1/6W	CARBON		A
R425	QRD167J-332	3.3K	1/6W	CARBON		B
R425	QRD167J-332	3.3K	1/6W	CARBON		C
R425	QRD167J-332	3.3K	1/6W	CARBON		D
R426	QRD167J-102	1K	1/6W	CARBON		
R427	QRD167J-101	100	1/6W	CARBON		
R428	QRD167J-101	100	1/6W	CARBON		
R429	QRD167J-103	10K	1/6W	CARBON		
R430	QRD167J-472	4.7K	1/6W	CARBON		
R501	QRD167J-473	47K	1/6W	CARBON		
R502	QRD167J-102	1K	1/6W	CARBON		
R503	QRD167J-222	2.2K	1/6W	CARBON		
R504	QRD167J-682	6.8K	1/6W	CARBON		
R505	QRD167J-331	330	1/6W	CARBON		
R506	QRD167J-392	3.9K	1/6W	CARBON		
R507	QRD167J-222	2.2K	1/6W	CARBON		
R508	QRD167J-222	2.2K	1/6W	CARBON		
R509	QRD167J-682	6.8K	1/6W	CARBON		
R510	QRD167J-331	330	1/6W	CARBON		
R511	QRD167J-333	33K	1/6W	CARBON		
R512	QRD167J-103	10K	1/6W	CARBON		
R513	QRD167J-103	10K	1/6W	CARBON		
R514	QRD167J-103	10K	1/6W	CARBON		
R515	QRD167J-103	10K	1/6W	CARBON		
R516	QRZ0077-680	68	1/4W	FUSIBLE		
R517	QRD167J-222	2.2K	1/6W	CARBON		
R518	QRD167J-103	10K	1/6W	CARBON		
R519	QRD167J-103	10K	1/6W	CARBON		
R520	QRD167J-224	220K	1/6W	CARBON		
R522	QRD167J-103	10K	1/6W	CARBON		
R523	QRD167J-103	10K	1/6W	CARBON		
R524	QRD167J-222	2.2K	1/6W	CARBON		
R525	QRD167J-223	22K	1/6W	CARBON		
R601	QRD167J-101	100	1/6W	CARBON		A
R601	QRD167J-101	100	1/6W	CARBON		B
R601	QRD167J-101	100	1/6W	CARBON		C
R601	QRD167J-101	100	1/6W	CARBON		D
R601	QRD167J-103	10K	1/6W	CARBON		E
R602	QRD167J-103	10K	1/6W	CARBON		A
R602	QRD167J-103	10K	1/6W	CARBON		B
R602	QRD167J-103	10K	1/6W	CARBON		C
R602	QRD167J-103	10K	1/6W	CARBON		D

Δ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R602	QRD167J-104	100K 1/6W CARBON	E
R603	QRD167J-331	330 1/6W CARBON	A
R603	QRD167J-331	330 1/6W CARBON	B
R603	QRD167J-331	330 1/6W CARBON	C
R603	QRD167J-331	330 1/6W CARBON	D
R603	QRD167J-471	470 1/6W CARBON	E
R604	QRD167J-183	18K 1/6W CARBON	
R605	QRD167J-222	2.2K 1/6W CARBON	
R606	QRD167J-221	220 1/6W CARBON	
R607	QRD167J-272	2.7K 1/6W CARBON	
R608	QRD167J-562	5.6K 1/6W CARBON	
R609	QRD167J-183	18K 1/6W CARBON	
R610	QRD167J-221	220 1/6W CARBON	
R611	QRD167J-332	3.3K 1/6W CARBON	
R612	QRD167J-562	5.6K 1/6W CARBON	
R613	QRD167J-183	18K 1/6W CARBON	
R614	QRD167J-221	220 1/6W CARBON	
R615	QRD167J-222	2.2K 1/6W CARBON	
R616	QRD167J-562	5.6K 1/6W CARBON	
R617	QRD167J-183	18K 1/6W CARBON	
R618	QRD167J-221	220 1/6W CARBON	
R619	QRD167J-182	1.8K 1/6W CARBON	
R620	QRD167J-562	5.6K 1/6W CARBON	
R621	QRD167J-183	18K 1/6W CARBON	
R622	QRD167J-221	220 1/6W CARBON	
R623	QRD167J-472	4.7K 1/6W CARBON	
R624	QRD167J-682	6.8K 1/6W CARBON	
R625	QRD167J-562	5.6K 1/6W CARBON	
R626	QRD167J-123	12K 1/6W CARBON	
R627	QRD167J-221	220 1/6W CARBON	
R628	QRD167J-333	33K 1/6W CARBON	
R629	QRD167J-103	10K 1/6W CARBON	
R630	QRD167J-273	27K 1/6W CARBON	
R631	QRD167J-123	12K 1/6W CARBON	
R632	QRD167J-473	47K 1/6W CARBON	
R633	QRD167J-105	1M 1/6W CARBON	
R634	QRD167J-331	330 1/6W CARBON	
R651	QRD167J-102	1K 1/6W CARBON	
R652	QRD167J-123	12K 1/6W CARBON	A
R652	QRD167J-273	27K 1/6W CARBON	B
R652	QRD167J-273	27K 1/6W CARBON	C
R652	QRD167J-273	27K 1/6W CARBON	D
R652	QRD167J-273	27K 1/6W CARBON	E
R653	QRD167J-561	560 1/6W CARBON	
R654	QRD167J-560	56 1/6W CARBON	
R656	QRD167J-103	10K 1/6W CARBON	
R658	QRD167J-103	10K 1/6W CARBON	C
R658	QRD167J-103	10K 1/6W CARBON	D
R658	QRD167J-103	10K 1/6W CARBON	E
R658	QRD167J-392	3.9K 1/6W CARBON	A
R658	QRD167J-392	3.9K 1/6W CARBON	B
R660	QRD167J-103	10K 1/6W CARBON	
R661	QRD167J-104	100K 1/6W CARBON	
R662	QRD167J-103	10K 1/6W CARBON	
R663	QRD167J-471	470 1/6W CARBON	
R664	QRD167J-104	100K 1/6W CARBON	
R665	QRD167J-223	22K 1/6W CARBON	
R666	QRD167J-223	22K 1/6W CARBON	
R667	QRD167J-682	6.8K 1/6W CARBON	
R669	QRD167J-104	100K 1/6W CARBON	
R670	QRD167J-473	47K 1/6W CARBON	
R671	QRD167J-471	470 1/6W CARBON	
R672	QRD167J-102	1K 1/6W CARBON	
R673	QRD167J-223	22K 1/6W CARBON	
R674	QRD167J-223	22K 1/6W CARBON	
R675	QRD167J-224	220K 1/6W CARBON	
R676	QRD167J-103	10K 1/6W CARBON	
R677	QRD167J-473	47K 1/6W CARBON	
R801	QRD125J-103	10K 1/2W UNF. CARBON	
R802	QRD167J-470	47 1/6W CARBON	
R803	QRD167J-123	12K 1/6W CARBON	
R804	QRD167J-103	10K 1/6W CARBON	
R806	QRD167J-103	10K 1/6W CARBON	A
R806	QRD167J-472	4.7K 1/6W CARBON	B
R806	QRD167J-472	4.7K 1/6W CARBON	C
R806	QRD167J-472	4.7K 1/6W CARBON	D
R806	QRD167J-472	4.7K 1/6W CARBON	E
R813	QRD167J-563	56K 1/6W CARBON	
R814	QRD167J-103	10K 1/6W CARBON	
R815	QRD167J-470	47 1/6W CARBON	
R816	QRD167J-103	10K 1/6W CARBON	
R817	QRZ0077-4R7	4.7 1/4W FUSIBLE	B
R817	QRZ0077-4R7	4.7 1/4W FUSIBLE	C
R817	QRZ0077-4R7	4.7 1/4W FUSIBLE	D
R817	QRZ0077-4R7	4.7 1/4W FUSIBLE	E
R818	QRZ0077-120	12 1/4W FUSIBLE	B
R818	QRZ0077-120	12 1/4W FUSIBLE	C
R818	QRZ0077-120	12 1/4W FUSIBLE	D
R818	QRZ0077-120	12 1/4W FUSIBLE	E
R819	QRD167J-223	22K 1/6W CARBON	
R822	QRD167J-223	22K 1/6W CARBON	

△ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
VR401	QVZ3518-224	220K 0.1W VARIABLE	
VR402	QVZ3518-224	220K 0.1W VARIABLE	
VR403	QVZ3518-473	47K 0.1W VARIABLE	
VR404	QVZ3518-473	47K 0.1W VARIABLE	
VR601	QVZ3518-102	1K 0.1W VARIABLE	
VR602	QVZ3518-224	220K 0.1W VARIABLE	
VR603	QVZ3518-104	100K 0.1W VARIABLE	
VR604	QVZ3518-473	47K 0.1W VARIABLE	

Others

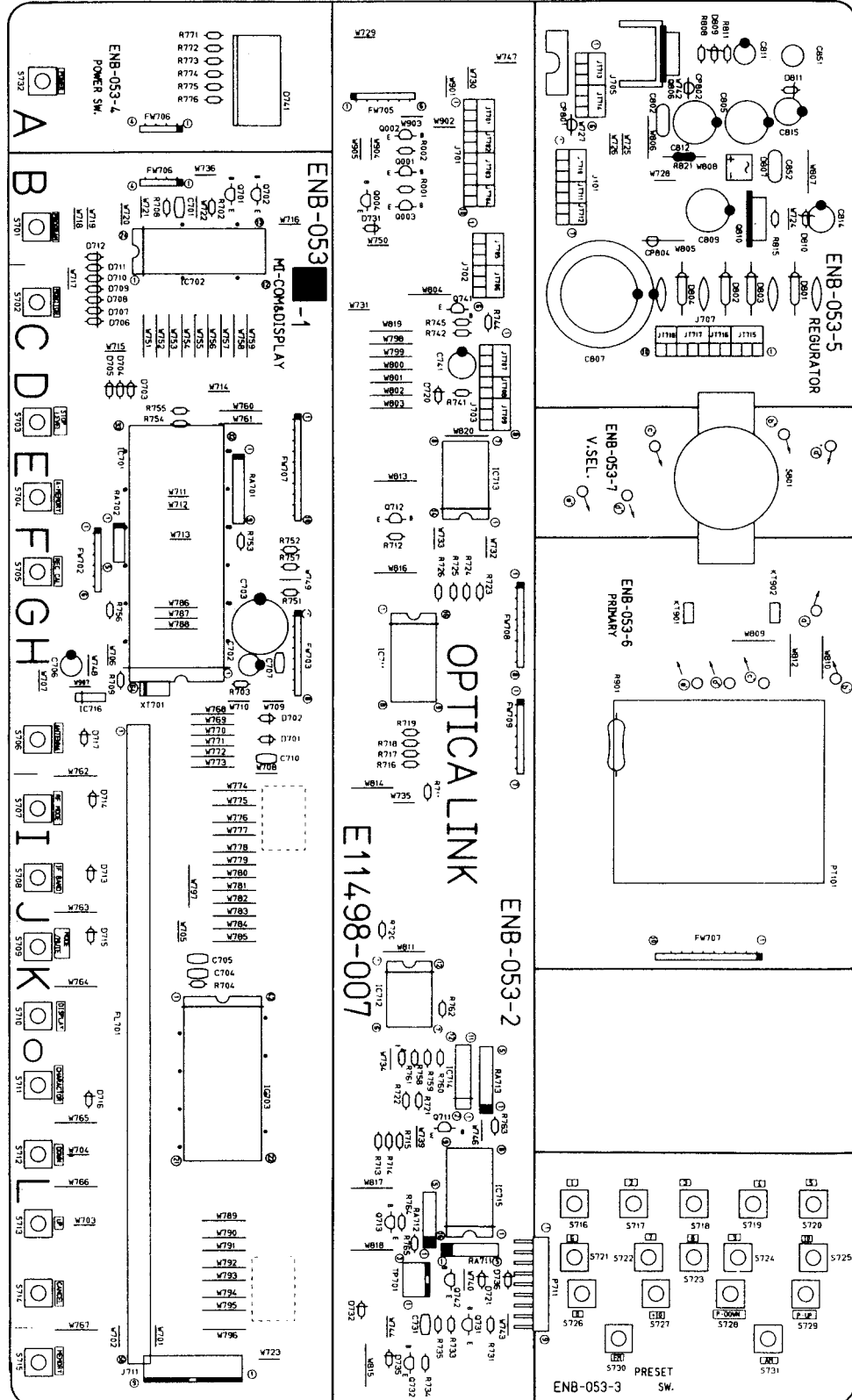
△ : SAFETY PARTS

ITEM	PART NUMBER	DESCRIPTION	AREA
	EMB40YV-201K	ANT. TERMINAL	
	EMB50YV-201K	ANTENNA TERMINAL	
	EMB50YV-202K	ANTENNA TERMINAL	E
	E11497-202	CIRCUIT BOARD	A
	E11497-202	CIRCUIT BOARD	B
	E11497-202	CIRCUIT BOARD	C
	E11497-202	CIRCUIT BOARD	D
	E11497-302	CIRCUIT BOARD	E
	E70859-001	EARTH PLATE	
	E70859-001	EARTH PLATE	
	E74135-001	SHIELD CASE	
	E74136-001	SHIELD CASE	
	E75383-001	SHIELD PLATE	
	E75565-001	SHIELD PLATE	E
	SBSB3008CC	SCREW	
	SBSB3008CC	SCREW	
H203	E70306-001	HEAT SINK	
H808	E70306-001	HEAT SINK	
J201	QMS3L10-0A0	MINI JACK	
J202	QMS3L10-0A0	MINI JACK	
J401	EMN00TV-202A	2P PIN JACK	A
J401	EMN00TV-202A	2P PIN JACK	B
J401	EMN00TV-202A	2P PIN JACK	C
J401	EMN00TV-202A	2P PIN JACK	D
J401	EMN00TV-215A	2P PIN JACK	E
L101	EQL0005-R09	INDUCTOR	
L102	EQL0005-R09	INDUCTOR	
L103	EQR2106-013	RF COIL	
L104	EQR2106-013	RF COIL	
L105	EQR2106-015	RF COIL	
L106	EQR2106-013	RF COIL	
L107	EQL4004-1R5	INDUCTOR	
L151	EQR2406-002	FM OSC COIL	
L152	EQL4004-2R2	INDUCTOR	
L153	EQL4004-101	INDUCTOR	
L201	EQL4004-100	INDUCTOR	
L202	EQL4004-100	INDUCTOR	
L301	EQR1111-006	AM RF COIL	
L302	EQR1207-013	FM OSC COIL	
L303	EQL3001-102K	INDUCTOR	
L401	EQL2108-392	INDUCTOR	E
L601	EQL4004-101	INDUCTOR	
S101	QSS6A12-E01	SLIDE SWITCH	B
T101	EQT2121-002	I.F. TRANSFORMER	
T102	EQT2121-002	I.F. TRANSFORMER	
T201	EQT2121-002	I.F. TRANSFORMER	
T202	EQT2121-006	I.F. TRANSFORMER	
T203	EQT2121-007	I.F. TRANSFORMER	
T204	EQT2121-006	I.F. TRANSFORMER	
T205	EQT2121-007	I.F. TRANSFORMER	
T206	EQT2140-017	I.F. TRANSFORMER	
T207	EQT2140-018	I.F. TRANSFORMER	
T208	EQT2111-001	I.F. TRANSFORMER	
T301	EQT1021-001	I.F. TRANSFORMER	
CF201	ECB2125-004R	CERAMIC FILTER	
CF202	ECB2125-004R	CERAMIC FILTER	
CF203	ECB2118-001R	CERAMIC FILTER	
CF204	ECB2118-001R	CERAMIC FILTER	
CF301	ECB1117-001	CERAMIC FILTER	
CF401	ECX0000-456KR	RESONATOR	
CF601	ECB2118-001R	CERAMIC FILTER	
CF602	ECB2118-001R	CERAMIC FILTER	
CP803	ICP-N5	I.C. PROTECTOR	B
CP803	ICP-N5	I.C. PROTECTOR	C
CP803	ICP-N5	I.C. PROTECTOR	D
CP803	ICP-N5	I.C. PROTECTOR	E
FW101	EWR37B-13LST	FLAT WIRE	
JT001	EMV7122-003	CONNECTOR	
JT002	EMV7122-002	CONNECTOR	
JT003	EMV7122-003	CONNECTOR	
JT004	EMV7122-003	CONNECTOR	
JT005	EMV7122-002	CONNECTOR	
JT006	EMV7122-002	CONNECTOR	
TP101	E67764-002	WRAPPING TERMINAL	
TP102	E67764-002	WRAPPING TERMINAL	
TP103	E67764-102	WRAPPING TERMINAL	
TP104	E67764-002	WRAPPING TERMINAL	
TP105	E67764-002	WRAPPING TERMINAL	
XT501	ECX0007-200KF	RESONATOR	

△ : SAFETY PARTS

■ ENB-053 □ Logic PC Board Ass'y

Note: ENB-053 □ varies according to the areas employed. See note (1) when placing an order.



Note (1)

PC Board Ass'y	Designated Areas
ENB-053 A	the U.S.A., Canada
ENB-053 B	Other Countries
ENB-053 C	Europe, Australia, West Germany
ENB-053 E BS	the U.K.

Transistors

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
Q001	2SD1302(S,T)	SILICON MATSUSHITA	
Q002	2SD1302(S,T)	SILICON MATSUSHITA	
Q003	DTA144ES	SILICON ROHM	
Q004	DTC144ES	SILICON ROHM	
Q701	DTA114EN	SILICON ROHM	
Q702	DTC114YN	SILICON ROHM	
Q711	2SA564A(R,S)	SILICON MATSUSHITA	
Q712	DTC114YN	SILICON ROHM	
Q713	2SA564A(R,S)	SILICON MATSUSHITA	
Q731	DTA144EN	SILICON ROHM	
Q732	2SC458(C,D)	SILICON HITACHI	
Q741	2SC458(C,D)	SILICON HITACHI	
Q742	DTA144EN	SILICON ROHM	
Q806	2SB507V(E)	SILICON SANYO	
Q810	2SD313V(E)	SILICON SANYO	

Δ : SAFETY PARTS

I.C.s

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
IC701	MN1758JSH	I.C. MATSUSHITA	
IC702	LC3517BSL-15	I.C. SANYO	
IC703	MSC7112-01SS	I.C. OXI	
IC711	ON3134	I.C. MATSUSHITA	
IC712	ON3133	I.C. MATSUSHITA	
IC713	TC74HC04AP	I.C. TOSHIBA	
IC714	TA57	I.C. ROHM	
IC715	ON3134	I.C. MATSUSHITA	
IC716	MN1280(P,Q)	I.C. MATSUSHITA	

Δ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
0701	1SS119	SILICON HITACHI	
0702	1SS119	SILICON HITACHI	
0703	1SS119	SILICON HITACHI	
0704	1SS119	SILICON HITACHI	
0704	1SS119	SILICON HITACHI	
0704	1SS119	SILICON HITACHI	
0705	1SS119	SILICON HITACHI	
0706	1SS119	SILICON HITACHI	
0707	1SS119	SILICON HITACHI	
0708	1SS119	SILICON HITACHI	
0709	1SS119	SILICON HITACHI	
0710	1SS119	SILICON HITACHI	
0711	1SS119	SILICON HITACHI	
0712	1SS119	SILICON HITACHI	
0713	1SS119	SILICON HITACHI	
0714	1SS119	SILICON HITACHI	
0715	1SS119	SILICON HITACHI	
0716	1SS119	SILICON HITACHI	
0717	1SS119	SILICON HITACHI	
0720	1SS119	SILICON HITACHI	
0721	1SS119	SILICON HITACHI	
0721	1SS119	SILICON HITACHI	
0721	1SS119	SILICON HITACHI	
0731	1SS119	SILICON HITACHI	
0732	1SS119	SILICON HITACHI	
0735	1SS119	SILICON HITACHI	
0736	1SS119	SILICON HITACHI	
0741	SLF-906B-20	L.E.D. SANYO	
0801	10DF2FD	ZENER NIHONINTER	
0802	10DF2FD	ZENER NIHONINTER	

Δ : SAFETY PARTS

Diodes

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
D803	10DF2FD	ZENER NIHONINTER	
D804	10DF2FD	ZENER NIHONINTER	
D807	104B42	SILICON TOSHIBA	
D809	MTZ36JC	ZENER ROHM	
D810	MTZ6.2JC	ZENER ROHM	
D811	MTZ8.2JC	ZENER ROHM	

Capacitors

Δ : SAFETY PARTS

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
C701	QCHB1EZ-223	0.022MF 25V CERAMIC	
C702	QEK61CM-226	22MF 16V ELECTRO	
C703	EEZ0502-479	47000MF 5.5V ELECTRO	
C704	QC891HK-101	100PF 50V CERAMIC	
C705	QCHB1EZ-223	0.022MF 25V CERAMIC	
C706	QEK61CM-107	100MF 16V ELECTRO	
C707	QCHB1EZ-223	0.022MF 25V CERAMIC	
C710	QCGB1HK-102	1000PF 50V CERAMIC	
C731	QCY21HK-332	3300PF 50V CERAMIC	
C741	QETB1HM-225	2.2MF 50V ELECTRO	
C802	QFN32AK-103	0.01MF 100V MYLAR	
C805	QETB1JM-227	220MF 63V ELECTRO	
C807	QETB1VM-228	2200MF 35V ELECTRO	
C809	QETB1CM-228	2200MF 16V ELECTRO	
C811	QETB1HM-226	22MF 50V ELECTRO	
C812	QETB1JM-227	220MF 63V ELECTRO	
C814	QETB1AM-477	470MF 10V ELECTRO	
C815	QETB1HM-107	100MF 50V ELECTRO	
C851	QEN61HM-105	1MF 50V NON POLE	
C852	QFN21AK-103	0.01MF 100V MYLAR	

Δ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
		MAKER	
R001	QRD167J-223	22K 1/6W CARBON	
R002	QRD167J-223	22K 1/6W CARBON	
R702	QRD167J-473	47K 1/6W CARBON	
R703	QRD167J-331	330 1/6W CARBON	
R704	QRD167J-273	27K 1/6W CARBON	
R708	QRD167J-103	10K 1/6W CARBON	
R709	QRD167J-104	100K 1/6W CARBON	
R711	QRD167J-470	47 1/6W CARBON	
R712	QRD167J-102	1K 1/6W CARBON	
R713	QRD167J-471	470 1/6W CARBON	
R714	QRD167J-102	1K 1/6W CARBON	
R715	QRD167J-102	1K 1/6W CARBON	
R716	QRD167J-102	1K 1/6W CARBON	
R717	QRD167J-102	1K 1/6W CARBON	
R718	QRD167J-102	1K 1/6W CARBON	
R719	QRD167J-102	1K 1/6W CARBON	
R720	QRD167J-102	1K 1/6W CARBON	
R721	QRD167J-102	1K 1/6W CARBON	
R722	QRD167J-102	1K 1/6W CARBON	
R723	QRD167J-102	1K 1/6W CARBON	
R724	QRD167J-102	1K 1/6W CARBON	
R725	QRD167J-102	1K 1/6W CARBON	
R726	QRD167J-102	1K 1/6W CARBON	
R731	QRD167J-471	470 1/6W CARBON	
R733	QRD167J-473	47K 1/6W CARBON	
R734	QRD167J-103	10K 1/6W CARBON	
R735	QRD167J-473	47K 1/6W CARBON	
R741	QRD167J-473	47K 1/6W CARBON	
R742	QRD167J-223	22K 1/6W CARBON	
R744	QRD167J-102	1K 1/6W CARBON	
R745	QRD167J-473	47K 1/6W CARBON	
R751	QRD167J-103	10K 1/6W CARBON	
R752	QRD167J-103	10K 1/6W CARBON	
R753	QRD167J-103	10K 1/6W CARBON	
R754	QRD167J-103	10K 1/6W CARBON	
R755	QRD167J-103	10K 1/6W CARBON	
R756	QRD167J-103	10K 1/6W CARBON	
R757	QRD167J-103	10K 1/6W CARBON	
R758	QRD167J-470	47 1/6W CARBON	
R759	QRD167J-470	47 1/6W CARBON	
R760	QRD167J-470	47 1/6W CARBON	
R761	QRD167J-470	47 1/6W CARBON	
R762	QRD167J-470	47 1/6W CARBON	
R763	QRD167J-103	10K 1/6W CARBON	
R764	QRD167J-470	47 1/6W CARBON	

Δ : SAFETY PARTS

Resistors

ITEM	PART NUMBER	DESCRIPTION	AREA
R765	QRD167J-103	10K 1/6W CARBON	
R771	QRD167J-103	10K 1/6W CARBON	
R772	QRD167J-103	10K 1/6W CARBON	
R773	QRD167J-103	10K 1/6W CARBON	
R774	QRD167J-103	10K 1/6W CARBON	
R775	QRD167J-103	10K 1/6W CARBON	
R776	QRD167J-103	10K 1/6W CARBON	
R808	QRD167J-222	2.2K 1/6W CARBON	B
R808	QRD167J-222	2.2K 1/6W CARBON	C
R808	QRD167J-222	2.2K 1/6W CARBON	EBS
R808	QRD167J-472	4.7K 1/6W CARBON	A
R811	QRD167J-102	1K 1/6W CARBON	
R815	QRD167J-102	1K 1/6W CARBON	B
R815	QRD167J-102	1K 1/6W CARBON	C
R815	QRD167J-102	1K 1/6W CARBON	EBS
R815	QRD167J-222	2.2K 1/6W CARBON	A
R821	QRZ0062-220	22 1/4W FUSIBLE	B
R821	QRZ0062-220	22 1/4W FUSIBLE	C
R821	QRZ0062-220	22 1/4W FUSIBLE	EBS
R901	QRC128K-275EM	2.7M 1/2W COMPOS	A
RA701	QRB089J-103	10K 1/10WR.NETWORK	
RA702	QRB049J-103	10K 1/10WR.NETWORK	
RA711	QRB045J-471	470 1/8W R.NETWORK	
RA712	QRB045J-102	1K 1/8W R.NETWORK	
RA713	QRB055J-103	10K 1/8W R.NETWORK	

△ : SAFETY PARTS

Others

ITEM	PART NUMBER	DESCRIPTION	AREA
	E11498-006	CIRCUIT BOARD	A
	E11498-006	CIRCUIT BOARD	B
	E11498-006	CIRCUIT BOARD	C
	E11498-006BS	CIRCUIT BOARD	EBS
	E66342-001	HOLDER	B
	E70859-001	EARTH PLATE	
	SBS83008CC	SCREW	
H806	E70306-001	HEAT SINK	
J711	E04370-009B	SOCKET	
P711	QMV5004-009	PLUG ASSY	
S701	ESP0001-011	TACT SWITCH	
S702	ESP0001-011	TACT SWITCH	
S703	ESP0001-011	TACT SWITCH	
S704	ESP0001-011	TACT SWITCH	
S705	ESP0001-011	TACT SWITCH	
S706	ESP0001-011	TACT SWITCH	
S707	ESP0001-011	TACT SWITCH	
S708	ESP0001-011	TACT SWITCH	
S709	ESP0001-011	TACT SWITCH	
S710	ESP0001-011	TACT SWITCH	
S711	ESP0001-011	TACT SWITCH	
S712	ESP0001-011	TACT SWITCH	
S713	ESP0001-011	TACT SWITCH	
S714	ESP0001-011	TACT SWITCH	
S715	ESP0001-011	TACT SWITCH	
S716	ESP0001-011	TACT SWITCH	
S717	ESP0001-011	TACT SWITCH	
S718	ESP0001-011	TACT SWITCH	
S719	ESP0001-011	TACT SWITCH	
S720	ESP0001-011	TACT SWITCH	
S721	ESP0001-011	TACT SWITCH	
S722	ESP0001-011	TACT SWITCH	
S723	ESP0001-011	TACT SWITCH	
S724	ESP0001-011	TACT SWITCH	
S725	ESP0001-011	TACT SWITCH	
S726	ESP0001-011	TACT SWITCH	
S727	ESP0001-011	TACT SWITCH	
S728	ESP0001-011	TACT SWITCH	
S729	ESP0001-011	TACT SWITCH	
S730	ESP0001-011	TACT SWITCH	
S731	ESP0001-011	TACT SWITCH	
S732	ESP0001-011	TACT SWITCH	
S801	QSR0074-001	VOLTAGE SELECTOR	B
CP801	ICP-N5	I.C. PROTECTOR	B
CP801	ICP-N5	I.C. PROTECTOR	C
CP801	ICP-N5	I.C. PROTECTOR	EBS
CP802	ICP-N5	I.C. PROTECTOR	B
CP802	ICP-N5	I.C. PROTECTOR	C
CP802	ICP-N5	I.C. PROTECTOR	EBS
CP804	ICP-N38	I.C. PROTECTOR	B
CP804	ICP-N38	I.C. PROTECTOR	C
CP804	ICP-N38	I.C. PROTECTOR	EBS
FL701	ELU0001-042	FL TUBE	
FS701	EX0015010N70S	SPACER	
FS702	EX0015010N70S	SPACER	

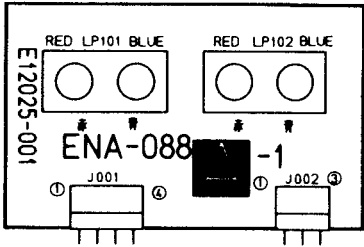
△ : SAFETY PARTS

Others

ITEM	PART NUMBER	DESCRIPTION	AREA
FW701	EWR3AB-13LST	FLAT WIRE	
FW702	EWR36B-20LST	FLAT WIRE	
FW703	EWR38B-13LST	FLAT WIRE	
FW705	EWR36B-13LST	FLAT WIRE	
FW706	EWR34B-05SST	FLAT WIRE	
FW707	EWR3AB-08LST	FLAT WIRE	
FW708	EWR38B-08LST	FLAT WIRE	
FW709	EWR37B-08LST	FLAT WIRE	
JA101	EMV7122-003	CONNECTOR	
JA701	EMV7122-003	CONNECTOR	
JA702	EMV7122-003	CONNECTOR	
JA703	EMV7122-003	CONNECTOR	
JA705	EMV7122-003	CONNECTOR	
JA707	EMV7122-003	CONNECTOR	
JB101	EMV7122-002	CONNECTOR	
JB701	EMV7122-002	CONNECTOR	
JB702	EMV7122-003	CONNECTOR	
JB703	EMV7122-002	CONNECTOR	
JB705	EMV7122-003	CONNECTOR	
JB707	EMV7122-002	CONNECTOR	
JC101	EMV7122-002	CONNECTOR	
JC701	EMV7122-003	CONNECTOR	
JC703	EMV7122-003	CONNECTOR	
JC707	EMV7122-003	CONNECTOR	
JD701	EMV7122-002	CONNECTOR	
JD707	EMV7122-002	CONNECTOR	
KT901	E65508-002	TAB	
KT902	E65508-002	TAB	
TP701	QMV5005-003K	PLUG ASSY	
XT701	ECX0072-000EM	RESONATOR	

△ : SAFETY PARTS

■ ENA-088 **A** Filter PC Board Ass'y (Only for West Germany)



Others			
ITEM	PART NUMBER	DESCRIPTION	AREA
	E12025-001(S)	CIRCUIT BOARD	
J001	EMV5101-004B	PLUG ASSY	
J002	EMV5101-003B	PLUG ASSY	
LP101	EQF0101-006	LOW PASS FILTER	
LP102	EQF0101-006	LOW PASS FILTER	
△ : SAFETY PARTS			

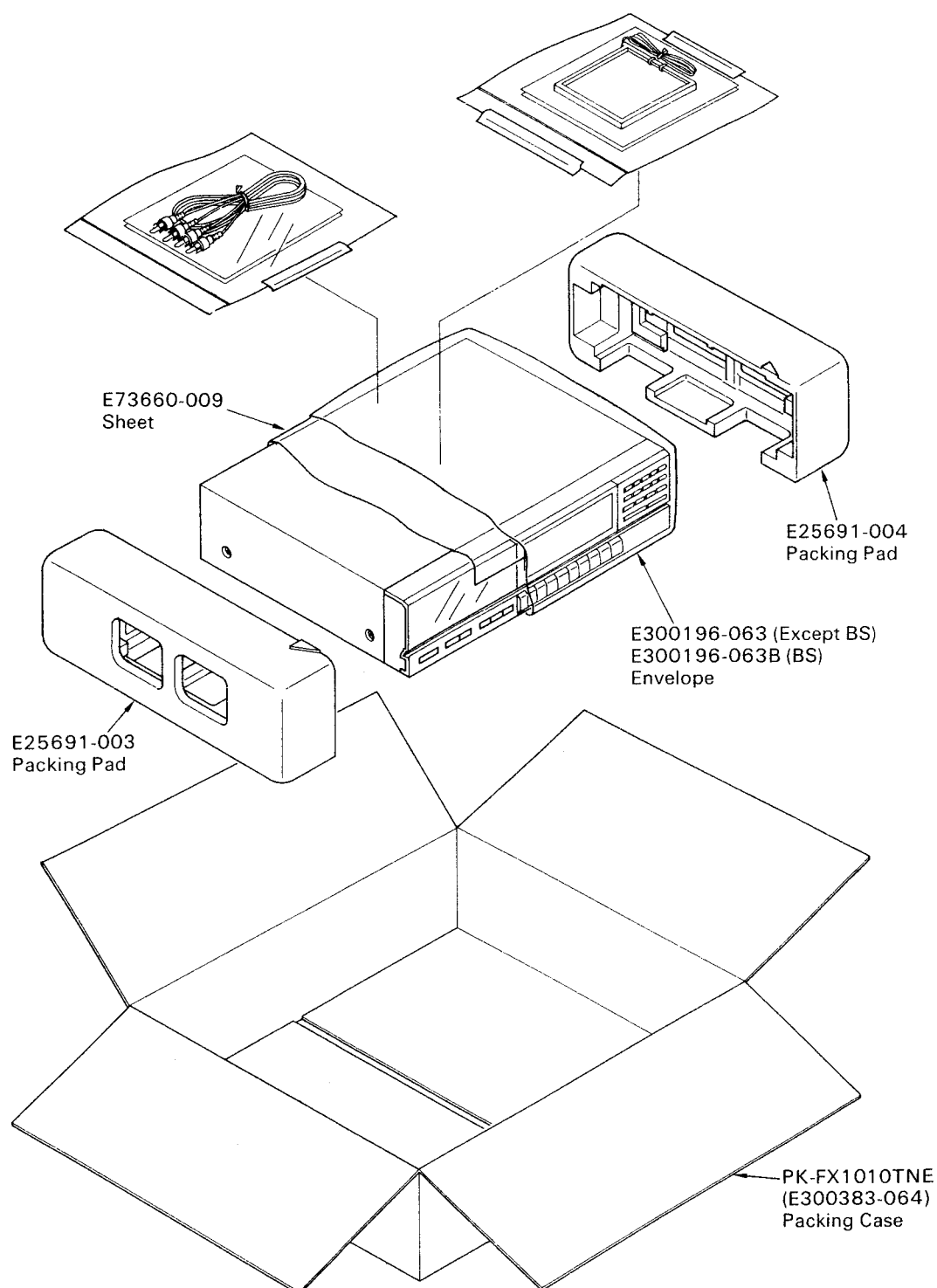
Accessories List

△	Part Number	Part Name	Q'ty	Description	Areas
	E30580-1534A	Instruction Book	1		Except BS
	E30580-1534ABS	Instruction Book	1		BS
	BT20025K	Warranty Card	1		C
	BT20029C	Warranty Card	1	for Australia	A
	BT20098	Warranty Card	1	for New Zealand	A
	BT20117	Warranty Card	1		G
	BT20060	Warranty Card	1		BS
	BT20044F	Safety Instruction Sheet	1		J
	BT20071A	Service Center	1		C
	BT20066A	EEC Agency	1		BS
	QZL1008-001	FTZ Information Sheet	1		G
	E43486-340A	Safety Sheet	1		BS
	E43486-335A	Caution Sheet	1		
	EQB4001-012	AM Loop Antenna	1		
	E30484-001	Loop Stand	1		
	EWP805-001	1P Plug Cord	1		
	EWP302-009	Signal Cord	1		
	EWP502-001	Built in Antenna	1		Except G
	EMZ2001-007	Adapter	1		Except G
	EMZ2001-008	Adapter	1		Except G
	E67007-001	Wire Antena Ass'y	1		G
	E300196-032	Envelope	1		Except BS
	E300196-032B	Envelope	1		BS
	BT20048C	Warranty Card	1		J
	BT20108	Service Information Sheet	1		J
△	E66416-003	Envelope	1		J
	E04056	Siemens Plug	1		U
	E35497-019	Caution Sheet	1	220V	U
	E41202-2	Envelope	1		Except BS
	E41202-2B	Envelope	1		BS

△ : Safety Parts

The Marks Designated Areas	
J.....the U.S.A.	G.....West Germany
C.....Canada	BS.....the U.K.
A.....Australia	U.....Other Countries
E.....Europe	No mark indicates all areas.

Packing Materials and Part Numbers



The Marks Designated Areas

J.....the U.S.A.	G.....West Germany
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A.....Australia	U.....Other Countries
E.....Europe	No mark indicates all areas.

MEMO